

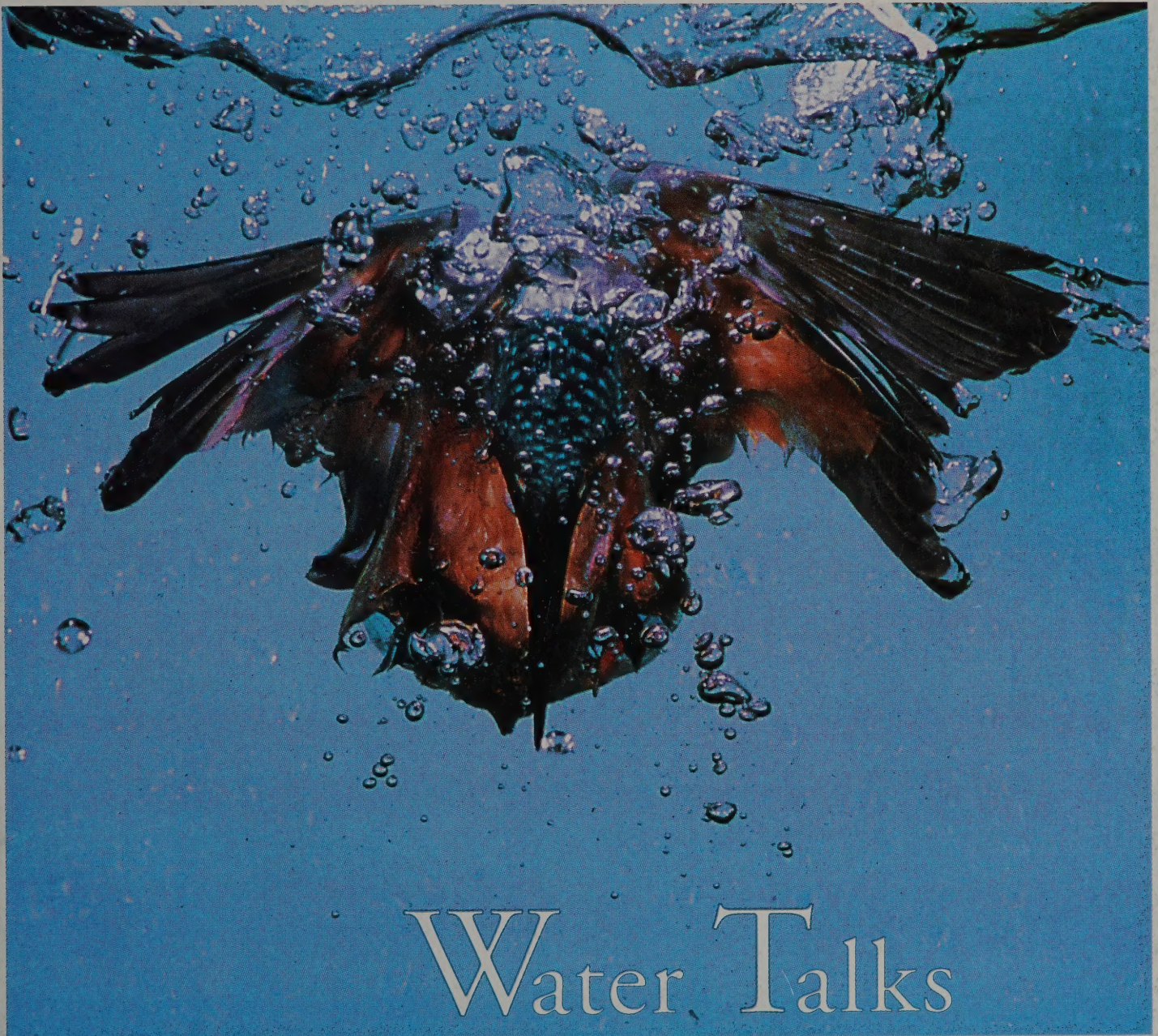
Ursula Le Guin • Gary Snyder • Anne Herbert

W H O L E R E V I E W E A R T H

No. 85
Spring 1995

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Water Talks

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Huey Johnson • Lewis MacAdams • Donella Meadows
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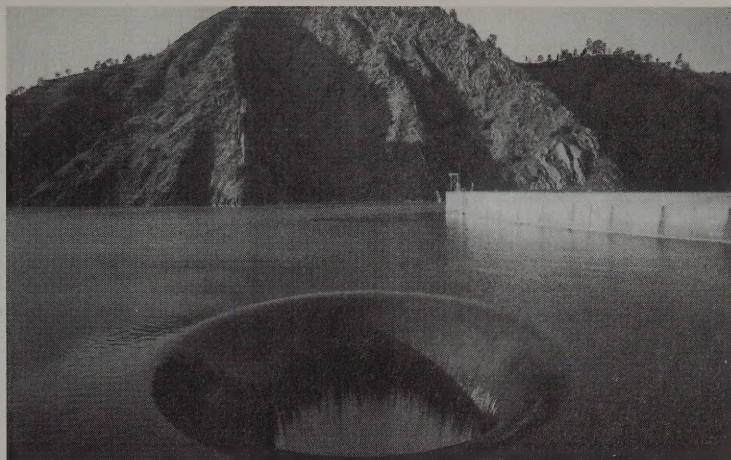
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1. San Luis Drain, Kesterson National Wildlife Refuge, California (1983)

The San Luis Drain carries wastewater to Kesterson from the toxic, selenium-laden soils of California's western San Joaquin Valley.

In the 1980s, huge numbers of birds died, or were born deformed, from this man-made disaster.

2. Indians Fishing, Lahontan Reservoir, near Fallon, Nevada (1984)

3. Stone Mother, Pyramid Lake, Nevada (1990)

In Paiute legend, a mother was overwhelmed with grief at losing her husband and children. She knelt crying in the sand. The tears fell about her, forming a puddle that grew larger and larger. She cried until all the water from her heart and body was gone. She turned to stone. Her tears became Pyramid Lake.

4. Spillway, Lake Berryessa, California (1986)

When Lake Berryessa fills up, water cascades over this spillway rather than over the top of the dam pictured on the right.

5. Three Mile Slough Bridge, near Rio Vista, California (1986)

I grew up on the edge of the Delta in California's Central Valley. Summers were very hot and winters produced this dream-like and mysterious tule fog that would blanket the ground for weeks. The Central Valley fog absorbs pesticides from the air at a very high rate. Contaminated fog touches everyone and everything in the valley.

For information about Robert Dawson and Ellen Manchester's Water in the West Project, see Gossip (p. 122). Robert Dawson is represented by Swanstock (PO Box 2350, Tucson, AZ 85701; 602/622-7133) and by Vision Gallery (1155 Mission Street, San Francisco, CA 94103; 415/621-2107).

**PHOTOGRAPHS BY
ROBERT DAWSON**



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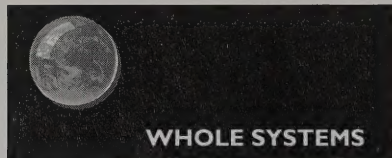
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Linda Connor



WHOLE SYSTEMS

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by Peter Warshall

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COVER

Diving Kingfisher

(c) 1994 Fritz Polking/Dembinsky
Photo Association

The Latin name for this European Kingfisher is *Alcedo Atthis*. *Alcedo* comes from the Greek *Alcyone*, or *Halcyon*, referring to an early story about the bird. *Alcyone* was distraught because her lover, *Ceyx*, had drowned. She dove into the sea. The gods took pity and turned them both into kingfishers.

People liked to talk about kingfishers. They used to say that kingfishers stilled the seas when they nested on the waves, in the weeks before and after the Winter solstice (the *Halcyon Days*). They said that kingfishers could avert storms and indicate favorable winds.

But kingfishers don't nest on the water. The male and the female take turns tunneling into a vertical bank, up to fifteen feet deep. They make a pretty little cup-shaped nest out of fishbones, birdshit, and grass. Then the female lays half-a-dozen or so white eggs.

Kingfishers' feathers have always been prized. Ironically, they're said to be the best for fly-fishing. —HH and PW



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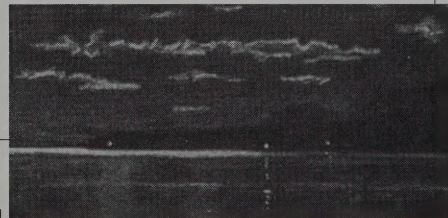
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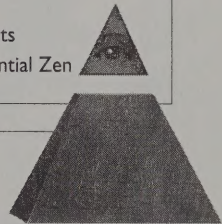
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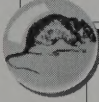
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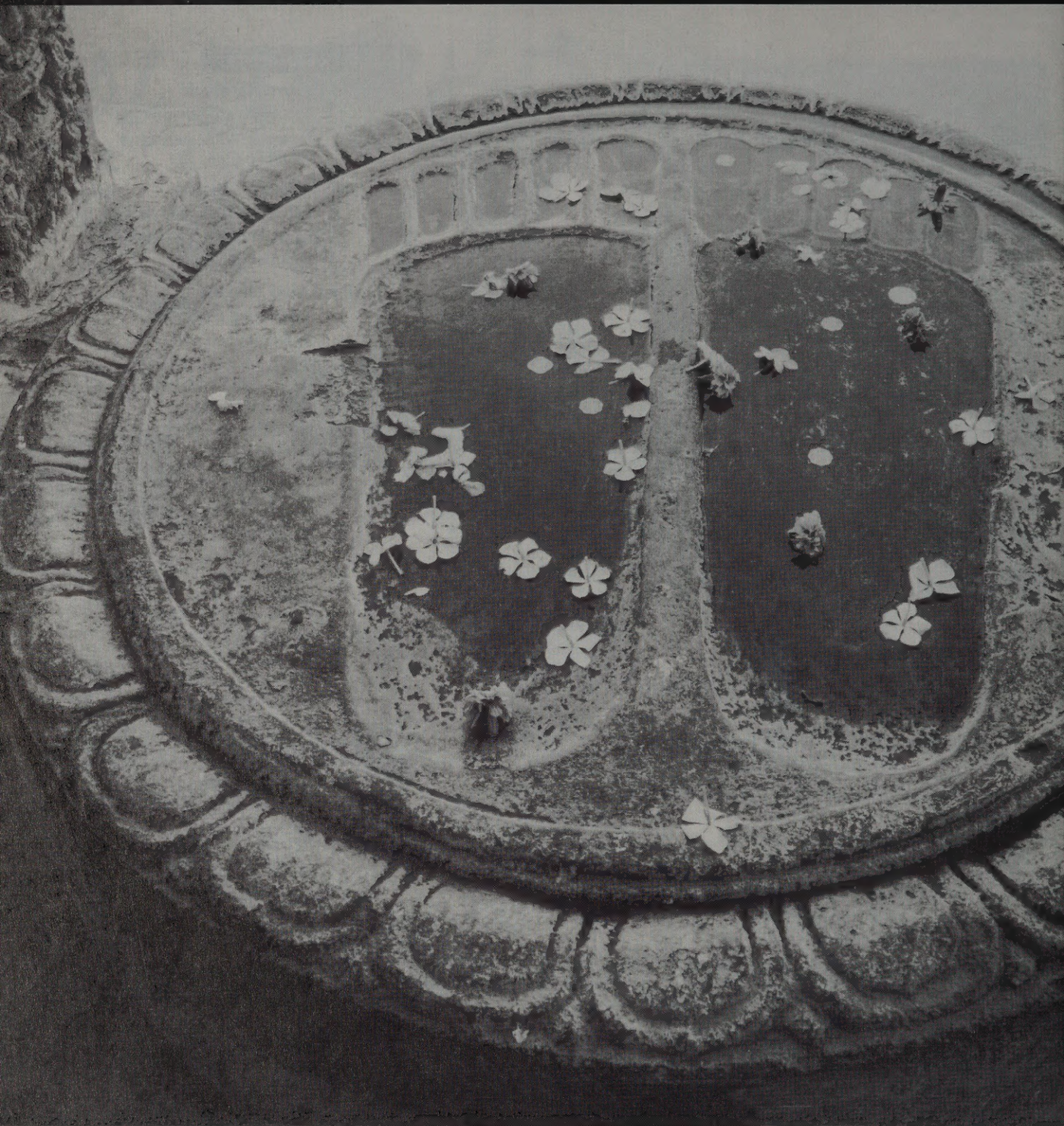
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This article
reprises a
1992 talk
given at
Ocean Ark
Institute.

*In the course of writing this introduction,
I called Peter Warshall and asked him what he'd like me to say. I
began with what I had written: "You're a biologist, ecologist, poet, and anthropolo-
gist," I said. "You've worked with communities and water and wildlife for twenty-five years.
You're an interdisciplinarian of remarkable range —" Peter quickly corrected me: "Water
and wildlife are one discipline."*

*Peter is working on a book, Gathering the Water: Sustainable
Watershed Communities. —RK*



THE MORALITY OF MOLECULAR WATER

BY PETER WARSHALL

The sage's transformation of the world arises from solving the problem of water. If water is united, the human heart will be corrected. If water is pure and clean, the heart of the people will readily be unified and desirous of cleanliness. Even when the citizenry's heart is changed, their conduct will not be depraved. So the sage's government does not consist of talking to people and persuading them, family by family. The pivot (of work) is water. —Lao Tze

TO THE MANIACAL water-watcher, there is a moment when water's presence on the planet riles the mind: Where did the stuff come from? Ancient creation stories, the origin of celestial and terrestrial, and fresh and salt waters, enchant but are they enough? What about new understandings — science's knowledge of the physical and chemical character of molecular water? Must we ignore them? The new creation myth finds water's origin in an atomic marriage: hydrogen and oxygen.

What is water? Spousal love.
—Gerard Manley Hopkins

1: The Origin of Water

Hydrogen is as elementary, old (born of the Big Bang), flammable, and common a substance as the universe can atomically generate. Its incomplete electron cloud yearns for another electron, even if that means mating itself (H₂). Its lightness lets it escape the planet's gravity-grip faster than any other gas on Earth. Oxygen is sixteen times plumper, younger by hundreds of thousands of years, born in giant red stars, a promiscuous bonder even unto itself (O₂) whose molecular marriages tend to leave a sour taste on the back of a human tongue, and whose incomplete atomic shells have both deep and superficial yearnings for two unattached electrons. (Water came before the genesis of gender, polygyny, or polygamy. I just can't decide which atom is what sex.)

In an arm of the Milky Way, among the 400 billion or so stars, a supernova exploded. Atoms were torn apart. Only on cooling did the plasma of particles allow for the birth of water's parents: hydrogen and oxygen. But the temperature was too hot for even the most passionate bonding. Oxygen and hydrogen simply crashed into and bounced off each other for millions of years. At some moment, as the vacuum of space ate the heat of the swirling gases, the temperature dropped and the birth of water, molecular water, became possible. Hydrogen and oxygen formed the first of their three bonds. They married covalently, shared electron clouds, and honeymooned as microscopic ice crystals on the dust of the dying star. Water was born as snowflakes. Water was born with the most delicate symmetry and an individuality of design that has no rival.

Molecular water survived because it had a protective friend. Silicates, a family of minerals that would become the the most common on Earth, crystallized in the gravitational field of

Photographs by
Linda Connor

Above: The Buddha's
footprints, India, 1979.

P. 8: Seven sacred
pools, Maui, Hawaii,
1978.

P. 11: Sadhu on the
Ganges, India, 1994.

the new planet. As they cooled and heated, cooled and heated, sometimes crystal, sometimes in a liquid that would become a crystal, the silicates incorporated water — not bonded chemically but “housed” in their molecular marriage within the crystal lattice. It was a fortunate first home for newlywed water. Silicates dissolve very reluctantly in water and water cannot destroy its own domesticity. The silicates are, in fact, the water-resistant sands of time. In the present, they constitute most of today’s beaches where each wave shuffles but never dissolves the grains.

Back to the story. As the Earth gained shape and the concentric shells of gases segregated out around its more solid core, water kept a low profile in its silicate sanctuary. Only when the planet formed a fragile crust, insulating its highly radioactive interior, did the silicate sanctuary heat up. Internal body temperatures rose, melting the silicates and releasing water as steam. From fumaroles, volcanos, and geysers came the first free form of water on the planet’s surface. From rocks and thermonuclear heat, the first water-child, Steam, was born. Maybe in the coolest pockets of the crust, another child, nascent Groundwater, hid from the heat.

If it weren’t for the Sun, the origin story of planetary water might end here. But, about 50 million years after the congealing of the planet, when the atmosphere was loaded with dust, steam and carbon dioxide, the Sun belched. A stupendous solar wind (the Tau-tauri) swept through the orbits of the inner planets. Mercury, Venus, Earth and Mars found their atmospheres blown off their cores and out toward the edges of the solar system. Jupiter and Saturn captured some of their atmospheres in passing. The first child of silicates — Steam — vanished.

Some geo-storytellers would dispute this part of the plot. Others say the original atmosphere left by hitchhiking rides with hydrogen as the planetary merry-go-round (each day was maybe five hours long) spun its gases into the void. Water, others say,

did not totally vanish from the surface of the Earth. It is possible, they say, that the Earth already had some seas or lakes that did not leave the planet. In all of these tales, the Earth had to give birth over again, restoring its atmosphere. I like the Tau-tauri plasma blitz.

The generous silicates melted once again. Some more comets smashed into the cooler core, embedding themselves in oceans or hot surface. From comets, meteors and silicates, Steam was reborn. Once again steam filled the atmosphere. By this second birth, the planet had trapped most of its heat deep within. When the atmosphere crashed to 646°K, the steam condensed to clouds and torrential rains rained endlessly. Freshwater, the second Earth-child of water, covered the planet in a shallow coat. These shallow “seas” were, as “lakes,” largely free of salts. And hidden in the cooled and pocketed rocks, Freshwater’s dark twin, Groundwater, found a stable home.

There was no one moment when the earliest seas of Earth turned salty. The birth of saline waters took place slowly, with silicate-derived clays leaching their sodium and volcanos out-gassing their chlorine. The story is confused by the timing of mountain building and ocean basin sinking. Two billion years ago, the continents finally attained sufficient size and altitude to display the watery landscape we know today: oceans and bays, estuaries and inland lakes, long rivers, braided streams, and ponds. The water quality twins — Salt and Fresh — completed Steam’s clan and finalized their separation. In turn, Salt/Fresh’s non-oceanic offspring such as Salty Lakes and Briny Lagoons joined the hydro-family.

When deep oceanic basins and Himalayan cordilleras were still dreams, the only high elevations sticking up from the shallow seas were volcanos. Perhaps, at this time, on some dormant volcanic peak in one of the polar regions, the first snowflake fell and stuck. Water began to return to its existence in its pre-planetary form, the ice crystals of cosmic dust.

You can’t make a precise model of molecular water. The electron cloud is so vast compared to the nucleus that a model with a pea-sized nucleus would require a mile-wide cloud to indicate the area in which its electron might be found.

Two extremely rough 3D models are the ball/ball “space-filling” model (A) and the ball-and-stick (B). The latter emphasizes that the atoms are joined by covalent bonds.

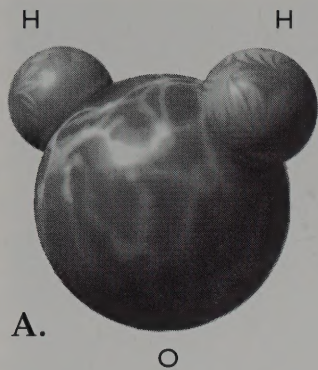
Two small hydrogen molecules and one large oxygen (C) show the electron orbits and where electrons are missing. A black dot is a nucleus and a circle an electron. (D) is the formal water electron or “water mouse.”

The birthdate of this last child of water — Fields-of-Ice — is the subject of some contention. The erosive powers of its sibling, Freshwater, ate the evidence. Trying to be rational, one cadre of geo-tall-talers says there is no evidence until 1.5 billion years ago. Coyote bards sing glacial ballads from their memories of the earlier times.

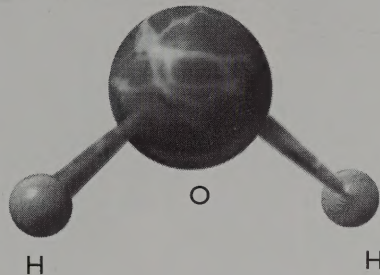
2: The Lopsided Powers of Water

The power of molecular water comes from its asymmetry, its imbalance. This image is a bit hard to render because the asymmetry is imperceptible by the human eye. Water maniacs have had to make up models, metaphors and analogies to describe its lopsidedness. There are plastic-ball and ball-and-stick models, Mickey Mouse metaphors, and sci-fi orbital models. But none of them truly captures the image of the different volumes and shapes of the clouds sketched by electron movement as it buzzes (or is it hums?) around the nucleus. Like many of the special Pueblo “medicine” saddle blankets or Kung! baskets or Nupiak amulets for dangerous shamanistic journeys, the object is lopsided.

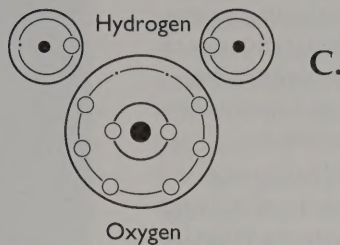
To survey this molecular landscape, the trick is to think like an electron. Identify yourself with the location of this negative energy. The water molecule, although essentially a globe and with an overall electric neutral-



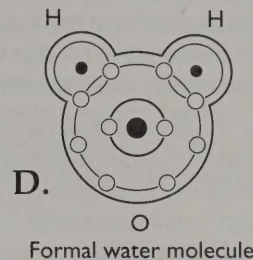
A.



B.



C.



D.

Formal water molecule

ity, cannot be cut like a globe into four equal quarters, and no point of electric balance can be located. If HOH was a linear molecule — a little opened bracelet with one hydrogen bead on each side of a much larger oxygen bead — a neutral symmetrical molecule would be formed with the negative charges on the left and right, and the positive charges cancelling each other out in the center of the oxygen atom. The electrical energy of the molecule would display an unexcitable equilibrium that was closed to other linkages without a good shot of new energy (like heat).

Water is dramatically asymmetrical because oxygen has a special "liking" for electrons and they are held closer to oxygen's nucleus than either of the hydrogen nuclei. Thinking like an electron cloud, you should now be snuggled up to oxygen's nucleus. The hydrogens show a little extra positive charge because of the unequal sharing of electrons. The lopsidedness means that, despite an overall neutrality, the water molecule has a more negative pole and a more positive pole (called a dipole or polar molecule). If you model water with hydrogen-and-oxygen plastic balls, the arrangement resembles a mouse's head, with the oxygen chin more negative and the hydrogen ears more positive. The hydrogen ears form an angle of 105° , rather than a straight line like the opened bracelet (180°),

because of the larger concentration of electrons in oxygen's innards.

A closer look at the molecular mouse would produce a different drawing. With their narrower tops pointing toward the middle, four bowling-pin-shaped clouds would stick out at 105° angles. Two of the bowling-pin-shaped clouds are the centers of positive energy (the hydrogen "ears") and two, formed from oxygen's outermost electron clouds, are the centers of negative energy. In this visualization, water assumes a more boxy form, with two negative and two positive "corners." The boxy form means that water does not pack together like marbles (with no corners) or mouse heads (with three points of contact) but has a more complex, flickering Bucky Fuller architecture. When you tinker-toy five water molecules together, a geodesic that looks roughly like a tetrahedron (an Egyptian pyramid with a water molecule at each of the points) can be built.

Molecular water's "disharmony" allows for a bit of disarray and wildness that keeps the molecular landscape hopping. The cockeyed architecture caused by the bond angles and the imbalanced electricity generate its uniqueness: the universal solvent, a structured liquid, exceptional cohesive and adhesive strength, a totally eccentric boiling and freezing point compared to other molecules, a capacity to absorb heat that maintains

life on the planet, the ability to float as a solid in its own liquid — to name just a few.

Before Part 3 describes these personality traits, it is good to stop a moment and think of the value of the lopsided shape and its powerful unequal negative energy distribution — two values "put down" as counterproductive or deformed, value not given enough praise among my friends. . . .

Let the most absent-minded of men be plunged into the deepest reveries . . . and he will infallibly lead you to water, if water there be in that region. Meditation and water are wedded forever. —Herman Melville

3: Water's Character

The most distinctive character of liquid water is its hydrogen-bonding, how it holds together, how it resists disassembly. Each polar molecule can create links between other molecules. The hydrogen-bonds flicker on and off between one, two, three or four of its "corners." At room temperature, about 86 percent of all the water molecules link at any one moment. The bonds grasp and relax their grip every $1/10,000,000,000$ to $1/100,000,000$ of a second, a normal time for a liquid. Water is remarkable in having so many bonds even though each individual hydrogen bond is loose, weak, and yielding. It is not

just the shared-electron marriage of a single oxygen to two hydrogens that creates the strength and structure of water, but this collectivity of fleetingly shared electrons between the married water molecules.

Water teaches that yielding and structured properties, loose and organized personality traits, mechanical movements and fluid freedoms should not be considered in conflict but as complementary parts of a whole.

Water is coherent. Water is cohesive. It maintains integrity without a loss of mobility or flexibility. Its "holding together" can be seen in its support of a leaf floating high on a puddle or the high-and-dry water strider racing about the eddies. Surface tension, the technical term for water's cohesive strength, also endows water with a small defiance, a resistance that will not ignominiously submit to gravity. Before thy cup runneth over, fill it to the brim. Then add a bit more. The watery dome that bulges just slightly over the brim is water's cohesion. The molecules "glue" themselves into a tensile web pushing the air upward. The meniscus is water or wine taking its stance against gravity.

Water displays a remarkable adherence to other materials, as well as coherence to itself. By H-bonds to myriad surfaces, water lays down a surface film ("wets" it). Knee joints profit from water's lubrication. Our bodies stay cool, in part, from sweat sticking to the skin and slowly vaporizing. The coastal rainforest would not feel so lung-like if rain and mist could not adhere to the tree moss, bark, and dangling lichens.

Adherence need not be external. Water adheres internally to helices of proteins, strands of tissue, and folds with many cellular interfaces. The flesh of many seeds swells with such avidity that a seed buried in pavement can crack it. Ships have sunk from their rice cargos imbibing so much water that the sacks burst and split the hulls. The concentrated egg mass of a female frog has such an affinity for adherent water that, within minutes of entering the pond, the egg mass gels into a volume larger than mom her-



The Chinese called the combined powers of adherence and coherence — molecular water's ability to move as a liquid against gravity — its rectitude, its uprightness: intellectual, moral or physical.



self. "Imbibition," a techno term for water adhering internally, plays a role in the setting of the Venus flytrap's jaws and the re-opening of the sensitive plant's leaflets after collapse.

Adherence benefits thousands of creatures with no reward to water. It slows water's return to the sea or sky. Adherence is a major element of water's benevolence.

In a glass tube, water will creep up the edges beyond the water level. This expansion (the upturned, sickle-

moon meniscus) is water expressing its coherent and adherent powers against gravity. In small tubes, molecular water's coherence/adherence bequeaths a much greater defiance of gravity. In trees, liquid water climbs up the arboreal plumbing in part by linking hydrogen-bonds so that the topmost molecule yanks up the molecule below. In large vessels of the tree, the water moves up at ten feet or more per hour. In soil, water climbs through the pores to bring moisture closer to the surface. Cathe-

dral forests and desert flowers rely on those evanescent hand grips of hydrogen bonds to bring them life. Only mercury rolls around in a silvery cohesiveness greater than water. Yet, mercury has no adhering properties.

The Chinese called the combined powers of adherence and coherence — molecular water's ability to move as a liquid against gravity — its rectitude, its uprightness: intellectual, moral or physical.

Water exhibits constancy in all its phases (liquid, gas, solid). This constancy is perceptible in the temperature change of liquid water which increases or decreases more slowly than almost any other known material. The watched pot etc., but also the watched ice cube tray. In the time it takes for an iron pan to get too hot to handle, the water within it will warm only to tepid. Water takes ten times the energy of iron (for equal weights) to heat one degree. A pan of oil takes half as much time to heat up as a pan of water. The slow heating of water acts as a kind of buffer against accelerated boiling or burning. Delicate custard, in a double boiler, can thank water for preventing in many a dessert calamity.

The constancy of the molecular hydro-community is equally dramatic when you try to force water to change state: water to ice; water to vapor. Water resists changing state. A "normal" marriage (without hydrogen-bonding) would endow water with a boiling point of -132°F (-91°C) and a freezing point of -148°F (-100°C), following the trends of water's close structural cousins (H_2S , H_2Se , H_2Te). These boiling and freezing points would render water a worthless medium for life's rock-n-roll metabolics, let alone for cooking. But water's boiling point is almost 200°C higher and its freezing point is 100°C higher, maintaining water as a fluid and at temperatures copacetic to enzymes and proteins and nutrients. Water's resiliency is part of the now oft-repeated aqua-mantra: asymmetry, imbalanced electrical energy, and a myriad of hydrogen bonds between the water molecules.

Life depends *in toto* on water's constancy. (Technically, this is one aspect of an organism's homeostasis.) The ability of water to absorb large amounts of energy buffers photosynthesis in cytoplasm and the transfer of oxygen in animal blood from chaotic flux; moderates the Earth's climate by using oceans and lakes for heat storage; eases seasonal change and our bodies' adaption to it by slowing, without shocks, the change of weather; and protects plants like cacti from boiling under desert skies. Most of all, water's specific heat, heat of vaporization, and heat of fusion give life its ability to maintain in hard times. Without these molecular traits, climatic extremes would turn living creatures over to their Maker at unprecedented rates.

Water, besides being structured and fluid, mobile and organized, yielding with rectitude, can now be respected for its resiliency in energy flux. It's a life preserver.

One last note about hydrogen-bonds and water. When water chills, the molecules move slower and come closer and closer together. At about 4°C , they are moving so slowly and are so close that *every one of the hydrogen bonds can occur simultaneously*. (With more heat, one or two or three bonds can occur from the "corners," but never all of them at once.) As water chills even further, the hydrogen-bonds maintain themselves by stretching the angles of attachment. They form an open lattice-work rather than jamming together like most other liquids. The result: ice floats as crystal less dense than its liquid, and occupies more space as a crystal than it does as its own meltwater.

The levity of crystal water not only busts your forgotten bottle of Bud in the freezer but covers the lake *on top* with a protective seal. If ice sank, wintering fish and the roots of lily pads would have no sanctuary. Eventually, all freshwater bodies like lakes would freeze solid. The lightness of ice, its contrariness, is also an expression of its humor. Another beer? The third bond of this molecular marriage is the most intimately in-

involved with the other members of the biochemical landscape. Ionic (from the Greek "going") bonds expose a paradoxical part of water's character. Where the hydrogen and covalent bonds solidify water's marriage within itself and to each other, ionization helps "distance" both water and many other married molecules from each other in order to allow creative acts and a wider range of molecular arrangements. "Distancing" encourages a looseness between the mates (the ions of atoms) that allows them greater freedom to interact with others.

This promotion of individuality between chemically bonded mates filled a nineteenth-century literary need in the description of love. When Michael Faraday advertised this water-mediated disassociation, George Eliot (Mary Ann Evans) jumped on it to describe love in *Middlemarch*. Faraday's and Eliot's writings have infiltrated our thoughts of love as a kind of electro-magical field that promotes attraction by first encouraging the best of each individual's potential. Ionic love offered an alternative to the Victorian, tightly bonded marriages so stultified by domestic sacrifice.

Water's ionizing tendencies are one model for love, reappearing as the "sacred" marriage in the works of D.H. Lawrence.

Both oxygen and hydrogen conspire in the paradox, cutting down on electrical attractive forces even as they promote them. Oxygen holds onto both its own and hydrogen's electrons, letting hydrogen maintain its positive charge (essentially a proton). Hydrogen has the slight tendency (and encouragement) to jump from its strong covalent bond with oxygen and to join covalently with the neighboring oxygen atom, an atom it has previously "known" only through the weak and yielding bonds of hydrogen.

A fleeting menage a quatre forms, with one oxygen having three hydrogens (H_3O^+ , hydronium). In pure water, this truly electrically charged moment returns to water's "normal"

menage a trois (H₂O) — one oxygen with two hydrogen. But in the presence of other ions (usually salts), like the sodium and chlorine of table salt, the new arrangements get complex. The menage a quatre (H₃O⁺) and the truly incomplete hydroxide (oxygen and one hydrogen, OH⁻) attach themselves to any attractive and appropriately charged neighbors. The whole society of electrically charged ions, now in the pool of water's ions, loses its clustering and specific bondage and becomes a more uniform mixture within water. We know them as "wine" or "Coca-Cola" or "ocean": solutions of water and other ingredients.

At any single moment, something like two ten-millionths of one percent of all water molecules are involved in surrounding other ions. So, the paradox. While the surrounding water has caused new opportunities for ionic bonding, the water itself acts as a shield to prevent electric currents from passing through the water rapidly. Pure water cuts down on the transmission of electric currents by 98 percent compared to a vacuum, or by one-third compared to alcohol. For instance, because alcohol transmits electricity better than water, a Dutch water-maniac, Dr. Lyklema, pointed out that a good drunk before electrocution would save the prison a lot of electricity.

For the moment, don't let this example distract! We're talking about the beauty of water and how it can arrange solutions and moderate electric currents. On Earth, the consequences of water's high dielectric constant and small ability to ionize certain solutions are much more life-giving than -taking. Without the universal solvent powers of water, the body would roller-coaster from too acid (the hydroniums) to too alkali (the hydroxides). Blood could not buffer the acid-forming molecules fabricated from carbon dioxide. Trees could not resist the corrosiveness of acid rain. Food could not be digested nor nutrients exchanged between members of the food web. Nerve cells could not control their signals and humans could not think.

Not all substances dissociate in water, only those called hydrophilic (water-loving). Water-fearing hydrophobes have no electric charge; they float oblivious as fat globs in chicken soup. To mix hydrophobes into water, a cook or Nature uses mechanical, not electrical, energy. Water plus oil and a lot of arm work make the vinaigrette, bernaïse or mayonnaise — but these are not solutions. Mayonnaise, whose water comes from the lemon juice or vinegar and homogenized milk are emulsions. They are created by breaking up the hydrophobes into such small droplets that they (hopefully) remain dispersed in water.

The hydrophobe/hydrophile split is not an antagonism. Water is the medium that allows the phobes and philes to evolve into new molecular structures and even acquire memory. For instance, proteins and nucleic acids (including DNA) evolved to be part hydrophobe and part hydrophile in order to build muscle and transfer genetic information. Cell walls fold fats over proteins — layering phobes and philes — to control ingress and egress of the unmated ions. Living fluids combine emulsions and solutions to provide structural memory to semen, mucus, blood, and the Jello-like interiors of certain cells.

Ancients (before mayonnaise) recognized that pure water held no memory. In Greek legend, Charon rows the dead across various rivers to the dwelling place of the dead. As they cross, they lose all memory of their last lifetime's acts. Charon rows them through self-purifying and memory-cleansing waters, the river of Lethe, one of four rivers required for safe passage. Pure water holds no memories of its previous elasticity, shape, or molecular arrangement.

In the Humble of Water

Despite science's continual attempt to rid itself of subjective metaphor and myth, the contemporary creation story and our images of molecular water do not truly break with the ethical tone and more ancient human

perceptions of water. Molecular water is still an arbiter of creativity and danger, purity and pollution, integrity and freedom, coherence and looseness, gathering and dissolving, rectitude and passive acceptance, benevolence and murder. Water remains one model for love, memory, and the needs of the soul.

We are always in contact with molecular water and we place value on molecular water, in our dreams if not in our bodies, whether we like it or not. "Our bodies are moulded rivers," to quote Novalis. Sent downstream from an upstream outfall, in parts per million or billion, molecular water carries the good or bad news through your faucet or even in your bottled water. By emulsion or solution, water always carries information about purity or danger within its substance. Water may transport the poison seed that grows to a cancerous bloom or the beneficent drops (priestly or in rain) that flood the spirit with grace. Undisclosed, unapparent, undetected, untracked, and unexplained, but here nevertheless.

Molecular water, perhaps trapped by the limitations of human minds, remains literally and metaphorically the glue that binds fire and rock and air as Lao Tze and Plato both proclaimed.

*All things are dissolved by fire
and glued together by water.*
—Plato's follower

Molecular water teaches that the opposite of creativity is not a counterfeit, colorless, staid, or stuffy act. The hydro-opposite is receptivity. Liquid water accepts more elements than any other liquid on Earth. It holds them and lets them roam in solution, mostly in a quietly receptive manner. It bears no human judgments. Water will dissolve what we call either pollutants or nutrients with equanimity.

At some point, receptive water becomes ionically creative, mixing the solutes. We may like the creation (green algae floating in a lake or a salmon in a brook) or not. Water cares not one bit. Water is still delightfully immune to human will.



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"Our bodies are moulded rivers," to quote Novalis. Sent downstream from an upstream outfall, in parts per million or billion, molecular water carries the good or bad news through your faucet or even in your bottled water.



The molecular subtext warns those who believe that they can ultimately tame and manipulate the substance. It warns them to cultivate more humility. Water instructs us relentlessly — anything you put in, it will receive and transform and offer back. In this personality trait, it is not unlike the human mind.

But for hydrophiles like myself, molecular water hides one mystery: its

song. Water bodies visible to humans carry ambiguous suggestive tunes. Sometimes we hear their sound-shapes as voices or divine music in the ripples or waves. Flowing water on a human scale brought the great water-watcher, Thoreau, both anxiety and solace:

He who hears the rippling of rivers in these degenerate days will not utterly despair.

Who's speaking in there? Below our level of perception. Among the molecules. John Coltrane, or Ali Akbar Khan? Bach, Jimi Hendrix, the Ba-Benjelle pygmies, or gagaku strings? Whales or the wind? Until microphones can hear the electrons' ballad, I can only return to the frog pond and meld these musings with the comfortable chorus of their random splashing and guttural rouncy squalls. 🐸



International

Australian Littoral Society: PO Box 49, Moorooka Q 4105, QLD, Australia; 07-848-5235.

Coalition Clean Baltic: c/o Svenska Naturskyddsforeningen, PO Box 4510, S-102 65 Stockholm, Sweden.

Coastal Society: PO Box 2081, Gloucester, MA 01930-2081; 508/281-9209.

Danube Circle: Damjanich utca 51, H-1971 Budapest, Hungary.

Ducks Unlimited: One Waterfowl Way, Memphis, TN 38120; 901/758-3825. 1190 Waverley St., Winnipeg, Manitoba, Canada R3T 2E2; 204/477-1760.

ECOINFORM: ul. Kropotkinskaya 10, 119889 Moscow, Russia; 7-095-202-41-71, fax 7-095-230-26-08. Umbrella organization for Russian environmental NGOs.

Environmental Liasion Centre International: PO Box 72461, Nairobi, Kenya; 254-2-562015, fax 254-2-562175.

Federación Conservacionista Mexicana: Aptdo 10-934, 11000 Mexico DF, Mexico.

Fédération des Amis de la Nature-Haiti Verte: BP 15110, Pétienville, Haiti.

Freshwater Foundation: Spring Hill Center, 725 County Road 6, Wayzata, MN 55391; 612/449-0092.

Friends of the Earth International: PO Box 19199, 1000 GD Amsterdam, Netherlands; 3120-622-1369, fax 3120-639-2181, email foieint@antenne.nl

Intermediate Technology Development Group: 103-105 Southampton Row, London, WC1B 4HH, UK; 44-0-71-436-9761, fax 44-0-71-436-2031 (reviewed on p. 56).

International Rivers Network: 1847 Berkeley Way, Berkeley, CA 94703-1576; 510/848-1155, email irn@igc.apc.org (see p. 14).

International Union for the Conservation of Nature (IUCN): Rue Mauverney 28, CH-1196 Gland, Switzerland. 1400 16th St. NW, Washington, DC 20006; 202/797-5454.

International Waterfowl and Wetlands Research Bureau: Slimbridge, Glos. GL2 7BX, UK; 44-45-389-333, fax 44-45-389-827.

International Wetlands for the Americas: 81 Stage Point Rd., PO Box 1770, Manomet, MA 02345; 508/224-6521, fax 508/224-9220.

Japanese NGO Center for International Cooperation: 1-14-5, Hongo, Bunkyo-ku, Tokyo 113, Japan; 81-3-3818-8613, fax 81-3-3818-0705. Publishes Directory of NGOs in Japan.

Latin American Network of Environmental NGOs: c/o CIPFE, Casilla Correo 13125, 11700 Montevideo, Uruguay; fax 598-2-985959. 30 NGOs in 12 countries.

North Atlantic Salmon Conservation Organization: 11 Rutland Square, Edinburgh EH1 2AS, UK.

Okavango Wildlife Society: PO Box 52362, Saxonwold 2132, South Africa; 27-11-8803833, fax 27-12-8802657.

Suomen Luonnonsuojeluliitto: PO Box 169, SF-00150 Helsinki, Finland; 358-0-642881.

Trount Unlimited: 800 Follin Lane SE #250, Vienna, VA 22180. 703-281-1100, fax 703/281-1825, email salmonid@igc.org; PO Box 290, Turangi, New Zealand.

Union for Saving the Aral Sea: Pushkina I, Tashkent, 700000, Uzbekistan.

WATERSHED YELLOW PAGES

National

Adopt-A-Stream Foundation: PO Box 5558, Everett, WA 98206; 206/388-3487.

American Littoral Society: Sandy Hook, Highlands, NJ 07732; 908/291-0055.

American Rivers: Attn: Dale Pontius, 801 Pennsylvania Ave. SE, Suite 400, Washington, DC 20003; 202/547-6900, fax 202/543-6142.

American Shores and Beach Preservation Association: 3000 Citrus Circle, Suite 230, Walnut Creek, CA 94598.

Center for Marine Conservation: 1725 DeSales Street NW, Washington, DC 20036; 202/429-5609. Sponsors annual beach clean-up days.

Center for Watershed Protection: 1020 Elden Street, Suite 205, Herndon, VA 22076; 703/709-0040.

Clean Ocean Action: PO Box 505, Sandy Hook, NJ 07732; 908/872-0111.

Clean Water Action: 1320 18th Street, NW, Washington, DC 20036; 202/457-1286.

Coalition to Restore Urban Water (CRUW): Attn: Julie Vincentz, Izaak Walton League of America, 707 Conservation Ln., Gaithersburg, MD 20878-2983; 800/Bug-IWLA.

Coast Alliance: 218 D Street SE, Washington, DC 20003.

Coastal Conservation Association: 4801 Woodway #200, Houston, TX 77056.

Earth First! PO Box 1415, Eugene, OR 97440; 503/741-9191, fax 503/741-9192.

Earth Island Institute: 300 Broadway, Suite 28, San Francisco, CA 94133; 415/788-3666.

EPA Wetlands Information Hotline: 800/832-7828.

Friends of the Earth: 1025 Vermont Ave. NW, Washington, DC 20005; 202/783-7400, email foedc@igc.apc.org

Friends of the River: 128 J St. 2nd Floor, Sacramento, CA 95814; 916/442-3155.

Greenpeace USA: 1436 U St. NW, Washington, DC 20009; 202/462-1177.

Izaak Walton League of America: 707 Conservation Ln., Gaithersburg, MD 20878-2983; 301/548-0150, fax 301/548-0146. Save Our Streams (SOS) technical assistance hotline 800/Bug-IWLA.

National Organization for River Sports: 314 N. 20th St., PO Box 6847, Colorado Springs, CO 80934; 719/473-2466.

National Water Center: PO Box 264, Eureka Springs, AR 76232; 501/253-9431.

National Watershed Coalition: 9150 West Jewell Ave., Suite 102, Lakewood, CO 80232-6469; 303/988-1810, fax 303/988-1896.

National Wetlands Technical Council: 1616 P St., NW, Suite 200, Washington, DC 20036; 202/328-5150.

National Wildlife Federation: 1400 16th St. NW, Washington, DC 20036; 202/797-6800.

Nature Conservancy: 1815 North Lynn Street, Arlington, VA 22209; 703/841-5300, fax 703/841-1283.

Rachel Carson Council: 8940 Jones Mill Rd., Chevy Chase, MD 20815; 301/652-1877.

River Network: PO Box 8787, Portland, OR 97207; 503/241-3506, 800/423-6747, fax 503/241-9256, email rivernet@igc.apc.org

Rocky Mountain Institute: 1739 Snowmass Creek Road, Snowmass, CO 81654-9199; 303/927-3851, fax 303/927-4178 (reviewed on p. 56)

Sierra Club: 730 Polk Street, San Francisco, CA 94109; 415/776-2211, fax 415/776-0350.

Soil and Water Conservation Society: 7515 NE Ankeny Road, Ankeny, IA 50021; 800/843-7645.

Terrene Institute: 1717 K Street NW, Washington, DC 20006; 202/833-8317.

Wetlands for Wildlife: PO Box 344, West Bend, WI 53095.

Arctic

Northern Alaska Environmental Center: 218 Driveway, Fairbanks, AK 99701; 907/452-5021.

Inuit Circumpolar Conference: 650 32nd Ave. Suite 404, Lachine, Quebec, Canada H8T 3K4; 514/637-3771, fax 514/637-3146.

Grand Council of the Cree: 24 Bayswater Ave., Ottawa, Ontario, Canada K1Y 2E4; 613/761-1655. PO Box 391161, Cambridge, MA 02139-0012; 617/491-5531, email 75361.1143@compuserve.com Hydro-Quebec and James Bay.

Northeast

Atlantic Salmon Federation: PO Box 429, St. Andrews, New Brunswick, Canada E0G 2X0; 506/529-4581, fax 506/529-4438.

Rivers Alliance of Connecticut: 4 The Green, Collinsville, CT 06022; 206/693-4875.

Long Island Sound Taskforce: Stamford Marine Center, Magee Ave., Stamford, CT 06902; 203/327-9786.

Delaware River & Bay Shoreline Council: 6 Crestfield Rd., Wilmington, DE 19810; 302/475-3872.

Connecticut River Watershed Council: One Ferry St., Easthampton, MA 01027; 413/529-9500, fax 413/529-9501.

Massachusetts Watershed Council: 20 Authority Dr., Fitchburg, MA 01420; 508/345-6001.

Save the Harbor/Save the Bay: 25 West St., 4th Floor, Boston, MA 02111; 617/415-2860.

Association for the Preservation of Cape Cod: PO Box 636, Orleans, MA 02653; 508/255-4142.

Kennebec Coalition: c/o Natural Resources Council of Maine, 271 State St., Augusta, ME 04330-6900; 207/622-3101.

Penobscot River Coalition: 43 Grant St., Bangor, ME 04401-3821.

Piscataquog Watershed Association: 47 Perkins Pond Rd., Weare, NH 03281.

Restoration of Atlantic Salmon in America: Box 311, Dublin, NH 03444; 603/563-8051.

Passaic River Coalition: 246 Madisonville Rd., Basking Ridge, NJ 07920; 908/766-7550.

Pinelands Preservation Alliance: 114 Hanover St., Pemberton, NJ 08068; 609/894-8000.

Bronx River Restoration Project: 2530 Jerome Ave., Bronx, NY 10468; 212/933-4079.

Hudson River Sloop Clearwater: 112 Market St., Poughkeepsie, NY 12601; 914/454-7673.

Upper Delaware Council: 211 Bridge St., PO Box 217, Narrowsburg, NY 12767-6406; 914/252-3022.

Pennsylvania Organization for Watersheds and Rivers: PO Box 765, Harrisburg, PA 17108-0765; 717/234-5550.

Save the Bay: 434 Smith St., Providence, RI 02908-3732; 401/272-3540, fax 401/273-7153.

Lake Champlain Committee: 14 S. Williams St., Burlington, VT 05401-3400; 802/658-1414.

Mid-Atlantic

Friends of Rock Creek's Environment: Rock Creek Park, 500 Glover Rd. NW, Washington, DC 20015; 202/426-6835.

Potomac River Association: PO Box 76, Valley Lee, MD 20692; 301/774-1581.

Anacostia Watershed Society: 5110 Roanoke Pl., Suite 101, College Park, MD 20740; 301/513-0316.

Chesapeake Bay Foundation: 162 Prince George St., Annapolis, MD 21401; 410/268-8816.

Mid-Atlantic Council of Watershed Associations: 2955 Edge Hill Rd., Huntingdon Valley, PA 19006; 215/657-0830.

Friends of the Rappahannock: 108 Wolfe St., Fredericksburg, VA 22401; 703/373-3448.

Alliance for the Chesapeake Bay: PO Box 1981, Richmond, VA 23216; 804/775-0951.

West Virginia Rivers Coalition: PO Box 606, Buckhannon, WV 26201; 304/472-0025.

Southeast

Alabama Conservancy: 2717 7th Ave. S. #207, Birmingham, AL 35233; 205/322-3126.

1000 Friends of Florida: PO Box 5948, Tallahassee, FL 32314; 904/222-6277.

Friends of the Everglades: 101 Westward Dr., Miami Springs, FL 33166; 305/888-1230.

Georgia Conservancy: 1776 Peachtree St. NW, #400 South, Atlanta, GA 30309; 404/876-2900.

Upper Chatahoochee Riverkeeper Fund: PO Box 7338, Atlanta, GA 30357-0338; 404/816-9888, fax 404/816-3613.
Save our Rivers: PO Box 105, Franklin, NC 28734; 704/369-7877.
French Broad River Foundation: 70 Woodfin Pl., Suite 327, Asheville, NC 28801; 704/252-1097.

Great Lakes

Center for the Great Lakes: 77 Harbor Square, Suite 2408, Toronto, Ontario, Canada M5J 2H2; 416/868-0550. 35 E. Wacker Drive, Chicago, IL 60601; 312/263-0785.

Great Lakes United: PO Box 548, Station A, Windsor, Ontario, Canada N9A 6M6. State University College/Bufalo, Cassety Hall, 1300 Elmwood Ave., Buffalo, NY 14222; 716/886-0142, fax 716/886-0303.

Friends of the Buffalo River: 62 Republic St., Buffalo, NY 14204; 716/856-8613.

Lake Michigan Federation: 59 East Van Buren, Suite 2215, Chicago, IL 60605; 312/939-0838, fax 312/939-2708.

Michigan Lake and Stream Association: 124 1/2 N. Main St., Three Rivers, MI 49093; 616/273-8200.

Grand Traverse Bay Watershed Initiative: c/o Jeanna Paluzzi, Coordinator, 3193 Logan Valley Road, Traverse City, MI 49684.

Friends of the Boundary Waters Wilderness: 1313 5th St. SE, Suite 329, Minneapolis, MN 55414; 612/379-3835.

Northshield: Box 385, Ely, MN 55731; 218/365-3309.

River Alliance of Wisconsin: 122 State St., #200, Madison, WI 53706; 608/257-2424. Chippewa/Flambeau Basin.

Great Lakes Inter-Tribal Council: PO Box 9, Lac Du Flambeau, WI 54538; 715/588-3324.

Mississippi Basin

Gulf of Mexico

The Ozark Society: PO Box 2914, Little Rock, AR 72203; 501/847-3738.

Hoosier Environmental Council: 1002 E. Washington St., Suite 300, Indianapolis, IN 46202; 317/685-8800.

River Fields: 643 W. Main St., Lexington, KY 40508-2018; 606/259-9655.

Citizens for a Clean Tangipahoa River: PO Box 128, Ponchatoula, LA 70405; 504/386-4426.

Louisiana Environmental Action Network: PO Box 66223, Baton Rouge, LA 70896; 504/928-1315.

Ozark River Keepers Network: PO Box 361, West Plains, MO 65775; 417/469-3978.

Northern Plains Resource Council: 2401 Montana Ave. #200, Billings, MT 59101; 406/248-1154.

Missouri River Basin Association: PO Box 9193, Missoula, MT 59807; 406/542-6272.

River Keepers: 325 7th St. S., PO Box 171, Fargo, ND 58107.

Stewards of the Platte: PO Box 2201, Grand Island, NE 68802; 308/382-2521.

Beaver Creek Wetlands Assoc.: PO Box 42, Alpha, OH 45301.

Save Oklahoma Streams: Univ. of Tulsa Center for Environmental Resources & Technology, 600 S. College Ave., Tulsa, OK 74101; 918/631-3085.

James River Restoration Project: PO Box 849, Huron, SD 57350; 605/352-0600.

Tennessee Environmental Council: 1700 Hayes St., Suite 101, Nashville, TN 37203.

Friends of the Clinch and Powell Rivers: PO Box 636, Sneedville, TN 37689.

Wetland Habitat Alliance of Texas: 118 E. Hospital, Suite 208, Nacogdoches, TX 75961; 409/569-9428.

Texas Rivers Protection Association: PO Box 219, Martindale, TX 78655; 512/392-6171.

Mississippi River Basin Alliance: 214 N. Henry, Suite 203, Madison, WI 53703; 608/257-4994.

Rocky Mountains

Colorado Environmental Coalition: 777 Grant St., #606, Denver, CO 80203-3535; 303/837-8701.

Colorado Rivers Alliance: PO Box 4054, Durango, CO 81302; 303/259-3209, fax 303/259-3339.

Idaho Rivers United: PO Box 633, Boise, ID 83701; 208/343-7481.

Northwest Water Watch: 103 S. 4th, Suite 258, Coeur D'Alene, ID 83814; 208/664-6791.

Northern Rockies Action Group: 9 Placer St., Helena, MT 59601; 406/442-6615.

Montana Environmental Information Center: PO Box 1184, Helena, MT 59624; 406/443-2520.

Greater Yellowstone Coalition: PO Box 1874, Bozeman, MT 59771; 406/586-1593.

Rio Grande Restoration: PO Box 1612, El Prado, NM 87529; 505/776-1369 (reviewed on p. 20).

Amigos Bravos: PO Box 238, Taos, NM 87571; 505/758-3874.

Intermountain West

Arizona Rivers Coalition: 3601 N. 7th Ave., Suite D, Phoenix, AZ 85013; 602/264-1823.

Hopi Tribe Water Resources Program: PO Box 123, Kykotsmovi, AZ 86039.

Navajo Natural Heritage: PO Box 1480, Window Rock, AZ 86515.

Desert Fishes Council: PO Box 337, Bishop, CA 93514; 619/872-8751.

Mono Lake Committee: PO Box 29, Lee Vining, CA 93541; 619/647-6595.

League to Save Lake Tahoe: 989 Tahoe Keys Blvd., Suite 6, South Lake Tahoe, CA 96150; 916/541-5388.

Four Corners Action Coalition: Box 483, Aztec, NM 87410-0483; 505/334-9289.

Southern Utah Wilderness Alliance: 1471 South 1100 East, Salt Lake City, UT 84105; 801/486-3161.

Utah Wetland Foundation: 1201 Walker Bldg., Salt Lake City, UT 84111; 801/364-2045.

Pacific Northwest

Southeast Alaska Conservation Council: 419 6th St., #328, Juneau, AK 99801; 907/586-6942.

Six Rivers Earth First!: 1415 McCullens Ave., Eureka, CA 95501.

Humboldt Watershed Alliance: 1658 Mad River Road, Arcata, CA 95521; 707/826-7757.

Mattole Restoration Council: PO Box 160, Petrolia, CA 95558-0160; 707/629-3514.

Cheslatta Carrier Nation: PO Box 909, Burns Lake, BC, Canada V0J 1E0; 604/694-3334.

Columbia Gorge Audubon Society: PO Box 512, Hood River, OR 97031; 509/493-4428.

Oregon Lakes Association: PO Box 692, Portland, OR 97207.

Columbia River Inter-Tribal Fish Commission: 729 NE Oregon #200, Portland, OR 97232; 503/238-0667.

Headwaters: PO Box 729, Ashland, OR 97520; 503/482-4459.

Hells Canyon Preservation Council: PO Box 908, Joseph, OR 97846; 503/432-8100.

Central Cascades Alliance: 1208 Snowden Rd., White Salmon, WA 96872.

Northwest Rivers Council: 1731 Westlake Ave. N., Suite 202, Seattle, WA 98109; 206/283-4988.

Puget Sound Alliance: 130 Nickerson, Suite 107, Seattle, WA 98109; 206/286-1309.

Snohomish Wetlands Council: 2433 Del Campo Dr., Everett, WA 98208; 206/337-6781.

Greater Ecosystem Alliance: PO Box 2813, Bellingham, WA 98227; 206/671-9950.

Nisqually River Council: PO Box 1076, Yelm, WA 98597; 206/459-6780.

Yakima Indian Nation: c/o Fisheries Department, PO Box 151, Toppenish, WA 98948; 509/865-6262.

Pacific Southwest

Friends of Los Angeles River: PO Box 292134, Los Angeles, CA 90029; 213/223-0585.

Heal the Bay: 1640 5th St., Suite 112, Santa Monica, CA 90401.

Stream Consciousness: 531 Highland Drive, Los Osos, CA 93402-3717.

Sonoma Watershed Council: 13568 Skyline Blvd., Woodside, CA 94062-4543; 707/546-6706, 707/575-7833.

Tuolumne River Preservation Trust: 3220 Sacramento St., San Francisco, CA 94115; 415/292-3531.

Napa River Focus: 3415 Browns Valley Rd., Napa, CA 94558; 707/253-5810.

Save San Francisco Bay: 1736 Franklin St., Third Floor, Oakland, CA 94612; 510/452-9261, fax 510/452-9266.

Urban Creeks Council: 2530 San Pablo Ave., Berkeley, CA 94702.

Central Sierra Watershed Coalition: PO Box 67, Angels Camp, CA 95222; 209/736-4677, fax 209/736-2902.

Anderson Valley Watershed Assoc.: 11800 Anderson Valley Rd., Boonville, CA 95415.

Russian River Watershed Protection Committee: PO Box 501, Guerneville, CA 95446; 707/869-0410.

South Yuba River Citizens League: PO Box 841, Nevada City, CA 95959; 916/265-5961.

Marianas Audubon Society: PO Box 4425, Agaña, Guam, GU 96910.

Big Island Rainforest Action Group: PO Box 341, Kuristown, HI 96760; 808/966-7622.

Life of the Land: 19 Niolopa Pl., Honolulu, HI 96817; 808/595-3903, email amnies@igc.apc.org

Compiled by David Burnor, Andrea Chase, Karen Van Epen, and Peter Warshall

Other Great Resources

To find out if there is an organized group in your watershed, inquire at your regional chapter of Trout Unltd., Ducks Unltd., Isaak Walton League, Audubon Society or Sierra Club, or check your library for one of these directories:

1994 River Conservation Directory

From the National Park Service & American Rivers. A veritable feshet of activist contacts around the country. A limited number of free copies are available for interested groups from Earl Foote at American Rivers (address above). Individuals can get a copy for \$12 postpaid from Superintendent of Documents, PO Box 371954, Pittsburgh, PA 15250-7954; 202/512-1800, fax 202/512-2250. Order ISBN 0-16-037918-0.

1994 Conservation Directory

The "Big Green Book" of national and international environmental organizations and databases. \$24.85 postpaid from the National Wildlife Federation, 8925 Leesburg Pike, Vienna, VA 22184; 800/432-6564. Order item # 7956. Also online through EcoNet: email econet@igc.org

World Directory of Environmental Organizations

Compiled in 1992 by the California Institute of Public Affairs, Sierra Club & IUCN. \$47 postpaid from CIPA, PO Box 189040, Sacramento, CA 95818; 916/442-2472, fax 916/442-2478.

Environmental Liason Center International

Based in Kenya (address above). Maintains a database of 6,000 environmental groups around the world, organized by purpose and updated every two years.

River Network (address above) has several useful publications including

People Protecting Rivers (1992; \$10 postpaid) and **How to Save a River** (\$18 postpaid, reviewed on p. 20). They also operate DORIS

(Directory of River Information Specialists), providing specialized help for grassroots groups. Call 800/42-DORIS.

An interview with
river activist
Juliette Majot

With
to W Respect
Water

BY PETER
WARSHALL

WER: Do you think that water is a gender issue?

JM: Certainly the lack of provision of clean, fresh water in a lot of the world has very significant implications for women, who are the carriers of water, particularly in developing countries. About 80 percent of disease is brought about by water. That certainly affects women who are, in the informal sector, also the caretakers, the doctors, the nurses. When I say that women are the carriers of water, I mean that millions of women around the world spend half to three-quarters of their day lifting water and carrying it from one place to another.

There was a really wonderful group called Maji Safi in Kenya. "Maji Safi" means fresh water — actually, safe water. Women organized in groups to develop small income-generating projects. With the income, they built large water collection tanks, and fit them on all the different types of shelter and houses. They collected a whole lot of rainwater, and that cut the amount of time they spent carrying water (over really high hills) by about seven-eighths. And that enabled them to build a

school and start teaching the children in the village. Their organizational response to their water problem actually contributed a great deal to the development of the village.

WER: Why wouldn't the men carry water?

JM: That's a good question. For different reasons in different places. In Kenya, for example, the men simply aren't there. They've gone into the urban centers to work. In some cases they've crossed borders to work; they are the people who send back the remittances that are holding up the economies in some developing countries. In other places, it simply is not traditional for men to carry water. It's something that's very deeply rooted, not a matter of women's rights or a Western view of feminism. Certainly, many of those women would like the men

to be carrying water; perhaps if water development continues along the course it's going, we'll see a change in men's attitudes to carrying water before we see a change in how water supply systems are finally managed, maintained, and implemented.

WER: Do you think there's a special spiritual connection to water in women — the water carriers?

JM: I don't know, maybe deep spiritual connections remain tied to things for longer when those things require a great deal of labor. Maybe people remain connected to things that are precious, that are lifegiving. We've lost that to some extent in many parts of the developed world — although people will say, "I'm drawn to water." "If I'm near a river, I go to the river." "I watch the river." "I watch the ocean." Any body of water is a naturally attractive ele-

Juliette Majot has campaigned on environmental and social justice issues for twenty years. She's the editor of International Rivers Network's quarterly publication World Rivers Review, which reports on water development projects around the world, and on the efforts of local communities to identify and implement alternatives to large-scale river dams. Juliette is also editor and co-founder of IRN's BankCheck Quarterly, which makes known the impact of the World Bank and the International Monetary Fund's policies and practices. —RK



Angela Gemino

Juliette Majot was arrested after participating in a blockade of the 1989 annual meeting of the World Bank and the International Monetary Fund. The IRN staff, with eight other people, held the protest to call attention to the fact that more than 100,000 people will be displaced by the World Bank-funded Sardar Sarovar Dam in India.

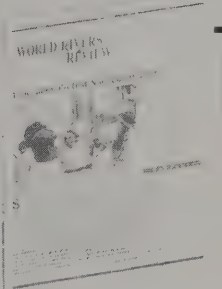
World Rivers Review

With clear-lake depth and tsunami vigilance, the best global newsletter on every aspect of water politics. News of Narmada peasants in India practicing nonviolent rebellion against a series of dams, the Havasupai fight to prevent uranium pollution of the Grand Canyon, the battle between Mexico and the U.S. over borderline canal seepage — news you don't find anywhere else. As a waterflow lover, the International Rivers Network is my favorite organization. —PW

- In an effort to expand the protection a national park in Austria might offer, Friends of the Earth International has joined with

World Rivers Review

\$35/year (4 issues).
Juliette Majot, Ed.
International Rivers Network,
1847 Berkeley Way,
Berkeley, CA 94703;
510/848-1155



Czech, Hungarian, and Austrian environmentalists calling for the designation of an International Park along the Danube between Vienna, Austria, and Gyor, Hungary, thus preventing the construction of dams at Hainburg, Gabčíkovo, and Nagymaros. A resolution calling for the International Park was delivered to the Hungarian Prime Minister in September.

ment. Real-estate developers build near water because the property has higher value; that has something to do with the spiritual connection to water. In a lot of the world (India, for example), rivers in particular are holy. The Mother Narmada River in India, which is now the site of one of the most controversial dam projects in the world, is the spiritual center for millions of people who live along that river. And that's not unique.

WER: What's your favorite body of water?

JM: Lake Michigan, for a very simple reason: I grew up on the shores of Lake Michigan.

WER: When you were fighting the power plant on Lake Michigan, was it because it consumed so

much water? Was it screwing up the water? Or was it just because it was nuclear power?

JM: That part of the lake is an incredibly striking area. You're in the dunes — the first National Shore designated along a body of fresh water. There are magnificent dunes over the sort of gray sheet that is Lake Michigan on some days. And you can look at an angle and see the steel mills of United States Steel Gary Works and Bethlehem Steel.

The power plant was going to be built on short pilings in shifting dunes. There was an incredible litany of problems associated with the plant, and with the Northern Indiana Public Service Company,

THEY might not think of themselves *politically* as environmentalists, but if somebody has a sense of place about anything that's outdoors, then a part of them is related to what environmentalism is about.

that really made it look like a very foolish investment and a foolish piece of engineering as well.

There's a bit of environmentalist in everybody that I've ever met. They might not think of themselves *politically* as environmentalists, but if

somebody has a sense of place about anything that's outdoors, then a part of them is related to what environmentalism is about. And if they have any other people in their lives, a part of them is related to what environmentalism is about.

If you're an activist long enough, you come to see personal actions as civil disobedience, as part of what some people call total tactics. You're saying: "I believe that through research, through media, through protest, through negotiation, through whatever it takes, we can improve the situation about whatever it is we want to improve." In my case, now it's freshwater. It's rivers. It's energy conservation. It's all those things that are very tied into the natural resource of water, which is becoming used as a political and economic weapon and as a political and economic commodity — I don't think that that's going to change, since we do have a limited amount of water. To me, being arrested at the World Bank was a statement: "I'm here to say that there are people throughout the world to whom you allow no voice in determining their own development path, in determining how they're going to decide how to use their very limited supply of water and how they're also going to respect that water existing as

itself, or river existing as a river, not just for somebody's use."

WER: One of the things that we're interested in is the whole idea of healing watersheds and what "healing" means. Any thoughts?

JM: The Earth and rivers have enormous recuperative powers. Really startling recuperative powers. I was on a raft on the Stanislaus River a couple of years ago. At that time, because of the drought, part of the area that had been submerged by the reservoir was again a running river.

We all decided, Let's go on the Stan while the Stan is back being a river again. It was incredibly graphic and incredibly eerie. A lot of trees — tree skeletons — were there, fully looking like trees but as though they were driftwood, standing-up driftwood trees. But the reeds had already come back, just in this one season. The vegetation that had returned in this area was really astounding. The scientists I was with were amazed at how much had come back. That kind of raised the feeling that, oh, this could heal. It's possible to heal. But I think that whether you call it healing, whether you call it restoration, I think it's such a positive thing that there is this feeling or beginning of a movement to try to reverse some of the damage that's been wrought, particularly

THE unnaturalness of watching a river stop is really so jolting and such a sharp assault on the senses.

to rivers. It's positive because it means that there are people who are able to say we made a mistake. Because it's going to take a lot of the people in the professions that were involved in those mistakes, the engineering profession in particular, to reverse some of this damage.

In the Northwest, on the Elwha River, we're seeing what may be the first decommissioning of dams. It's a very, very, very expensive process. When you've got people like Dan Beard, commissioner of the U.S. Bureau of Reclamation traveling around internationally [the Elwha dam is maintained by the BuRec], talking about the changing role of the Bureau of Reclamation which is really one of the most powerful water and electricity supply organizations in the world. For them to walk around and say our priorities have changed, we're not going to be building large infrastructure anymore and we're going to be starting to put a lot of our resources and expertise into alternatives and into restoration which we're going to need to pay attention to.

Juliette's Choice

IRN's Most Endangered Rivers:

Three Gorges Dam,
Yangtze River, China.

Balbina Dam,
Uatuma River, Brazil.

Sarovar Dam,
Narmada River, India.

Best Video:

Large Dams, False Promises
(1993; 33 minutes. \$33 postpaid
from IRN).

Heroines:

The women of Kenya.

Meta Patkar,
Narmada River, India.

Sandra Postel, USA.

Amana Reiko,
Nagara River, Japan.

We work very hard to reform the policies of the World Bank, which is the pivotal funder in the world of large-scale water infrastructure — water mega-projects. One of our points of leverage has been to target the money that US taxpayers put into the World Bank and to predicate that money on significant reforms and policies and practices of the bank. We now find ourselves in a pattern of having very politically conservative people in charge of the US Congress who are also interested in cutting off money to the World Bank, though in large part for a very different set of reasons.

WER: The alliance between fiscal conservatives, free enterprise people, and conservationists is actually a very interesting one and it's growing.

JM: Yeah, it really is. I've been exposed to a lot of things I call nightmare coalitions.

WER: Is there anything you'd say water flow, rather than working with people, has taught you? Has water itself been the teacher in certain ways?

JM: Well, I think so. It's kind of hard to wax poetic. Water is mesmerizing. And I think the amazing thing about it, the thing that cap-

tures our imagination, is that it keeps flowing. It finds ways to go from where it started to where it's eventually going to be, and then it kind of starts all over again and starts to flow all over again. Maybe that's what's so emotionally devastating about seeing rapids or a river blown up and a dam put in place. The unnaturalness of watching a river *stop* is really so jolting and such a sharp assault on the senses. If it wasn't that people like to look at beautiful bodies of water, all these dam pictures that the dam industry puts out of beautiful dams holding beautiful bodies of water could be seen a little bit more for what they are.

WER: There's a whole group of people that loves the reservoir for motor boating and water skiing and largemouth bass fishing. It's a different aesthetic and feeling.

JM: Well, when it gets down to it, it's the love of being around water. That's legitimate, that people like to touch it, they like to be on top of it, they like to be underneath it. We were born inside water so it's not surprising that we love being there. The power of running water, of water moving and finding its path and being liquid, I suppose all of that is something that's just innate and it's helpful in how we do our work. ♡

Best Books

The Mekong Currency (1992, Project for Ecological Recovery, Bangkok).

The Sardar Sarovar Project (Mahesh T. Pathak, Editor. 1991, South Asia Books).

Cadillac Desert (Marc Reisner. 1987, Penguin Books. Reviewed in *MWEC*, p. 80).

Basic Information Packages:

Three Gorges Dam, China; Pangué Dam, Bio River, Chile; Arun III Dam, Nepal; Sardar Sarovar Dam, India; Xiaolangdi Dam, Yellow River, China; and the Bangladesh Flood Action Plan are \$12 each from:

Does your organization need funding for river or watershed restoration projects? These nonprofit foundations may be able to help you. Call or write for information and guidelines.

The Bullitt Foundation

1212 Manor Ave.
Seattle, WA 98101-2825
206/343-0807
Giving primarily in the Pacific Northwest.

The Educational Foundation of America

35 Church Lane
Westport, CT 06880
203/226-6498
Giving nationwide.

The David and Lucile Packard Foundation

300 Second St., Suite 200
Los Altos, CA 94022
415/948-7658
Giving nationwide.

The Charles Stewart Mott Foundation

1200 Mott Foundation Bldg.
Flint, MI 48502-1851
810/238-5651
Giving nationwide.

The Ford Foundation

320 East 43rd St.
New York, NY 10017
212/573-5000
Giving internationally.

International Rivers Network

1847 Berkeley Way,
Berkeley, CA 94703.
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fax 510/848-1008,
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Teswa River
just above
Kitlope Lake.

Photos by
Stewart Brand

Victory in the Kitlope

BY IAN GILL

EARLY LAST DECEMBER, a feast was convened in the small Native community of Kitamaat, in northern British Columbia. Feasts are enormously important social and cultural ceremonies for Northwest First Nations. Historically, they have been a key mechanism for transmitting information and legitimizing transactions among people with strong oral traditions. The naming of children, the assumption of new chiefs, weddings, funerals, peace treaties: virtually all major community events are traditionally ratified and celebrated by way of a feast.

For the Haisla people, last December's feast was a celebration that resonated far beyond Kitamaat Village. Speaker after speaker rose to exalt an unprecedented decision earlier in the year to permanently protect about 800,000 acres of pristine ancient coastal temperate rainforest. On August 16, the B.C. provisional government had announced that most of the Greater Kitlope Ecosystem was to be spared from logging.

The Haisla, backed by the Portland, Oregon conservation organization, Ecotrust, had pressed hard for fully one million acres to be preserved. In the end, they got 80 percent of what they asked for. So, on an unseasonably cold night in December, the Haisla opened up their community and warmed several hundred

souls with heartfelt thanks for helping to save their territory from the chainsaw's bite.

Looking back over more than a decade of pitched battles in the B.C. woods, the Kitlope decision stands out for a number of reasons. First, it is a testament to the Haisla's determination that the Kitlope would remain untouched, especially in view of the ravages that resource extraction had caused elsewhere in their territory. Second, the Kitlope was preserved without a single placard being raised: no angry voices, no arrests, no screaming headlines, none of the usual fare that British Columbians have come

to expect around land use issues. Third, the powerful coalition forged between Ecotrust and the Haisla was critical in bringing to bear a persuasive case that neither government nor industry could refute: the argument that, left intact, the Kitlope had a far greater value than it would ever have as an industrial site. People look upon the preservation of the Kitlope in absolute wonder, because not only did the government agree to protect it; the company with harvesting rights in the area agreed to forgo them without a dollar in compensation.

In the late eighties, the West Fraser Timber Company was all set to start building roads into the Kitlope. The Haisla were girding themselves for a hard scrap in the best tradition of B.C.'s resource battles. They wanted to keep the company out. Down in Portland, meanwhile, Spencer Beebe and Ken Margolis of Conservation International were branching off to form Ecotrust, and one of the first things

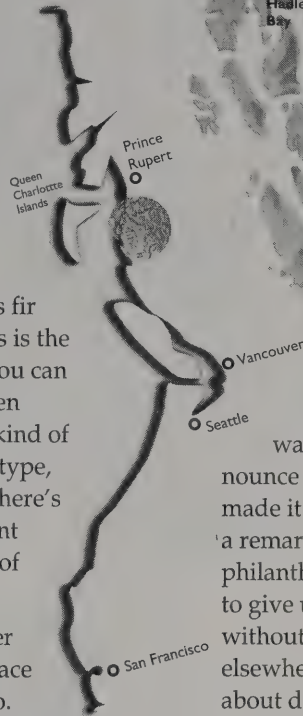
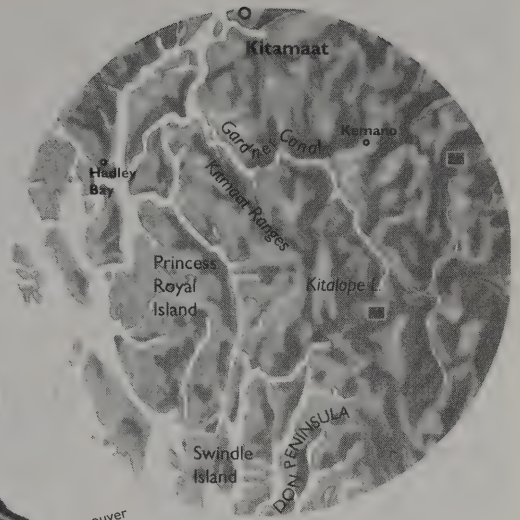
Ian Gill first visited the Kitlope in the summer of 1993 on assignment as environment reporter for the Canadian Broadcasting Corporation. Last November, he left the CBC to become director of Ecotrust Canada.

they did was set about mapping the world's remaining coastal temperate rainforests. The Kitlope leaped off the page, a sea of green that turned out to be the largest completely intact rainforest watershed of its type left anywhere on Earth. Beebe arranged to meet the Haisla and, in the summer of 1990, Haisla elders showed him the Kitlope.

What Beebe saw was a spectacular place. Superlatives tend to get a little shopworn when describing wilderness, but not in the Kitlope. It is home to all six species of salmon. Oolachan, coveted by Natives for their oil and strong flavor, run the rivers there, as do Dolly Varden and large schools of sea-run cutthroat trout. Scientists have identified 120 species of birds, including marbled murrelets and black merlins; 130 plants of cultural significance to the Haisla; mountain goats, moose beavers, grizzly and black bears; countless insect species; bats, pygmy shrews, even tailed frogs. This species richness

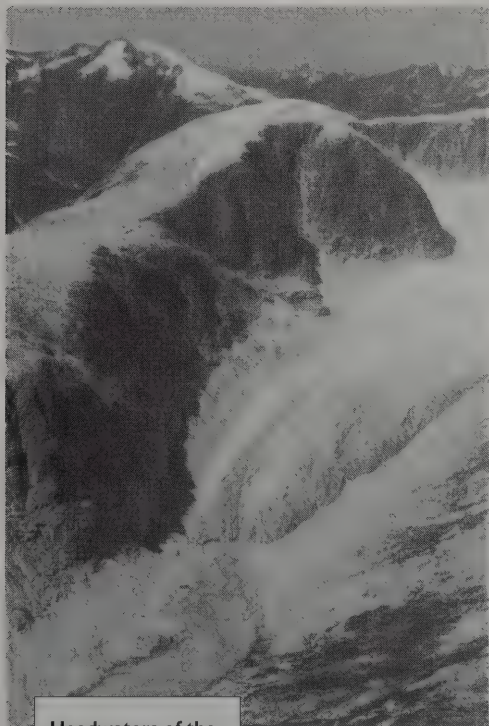
is captured in the Kitlope's rich flood plains, steep-sided mountain slopes, alpine meadows and teeming estuaries. The forest is characterized by Sitka spruce, western hemlock, amabilis fir and yellow cedar, plus the northernmost strands of Douglas fir on the coast. "This is the one place where you can find it all," says Ken Margolis. "It is a kind of museum of an ecotype, and I don't think there's any more important place on the coast of North America."

West Fraser Timber Co. thought the place was important, too. When the Haisla made it clear they were determined to keep the company out, West Fraser didn't just roll over and give up. The company promised jobs to the Haisla, and an economic stake in logging the ecosystem that would have amounted to around 100 million sorely needed dollars flowing to the Haisla. Gerald Amos, a former elected chief of the Haisla admits that the West Fraser offer gave his people pause. But once the global significance of the area was explained to the people, Amos said, the company offer was turned down flat. "To a person, there was no hesitancy that it was the right decision," Amos said. With that, the Kitlope's protection was all but assured. Premier Mike Harcourt, bruised and battered over the Clayoquot controversy, desperately



wanted some good news to announce last summer. West Fraser made it a whole lot easier when, in a remarkable gesture of corporate philanthropy, the company agreed to give up its rights to log there without demanding more timber elsewhere. "We really felt good about doing this," said company president Hank Ketcham when he shared the stage in a theatre in the B.C. Legislature with Harcourt, Gerald Amos, Spencer Beebe, and Haisla elders and leaders. It was a remarkable scene: industry, conservationists, First Nations and government, unanimous in their commitment that there will never be logging in what Harcourt called "one of the world's great natural and cultural treasures."

So just before Christmas, there was a mood of great comfort and joy in Kitamaat Village. The community hall reverberated to the songs and dancing of Haisla youth. Haisla elders praised the efforts of their own leaders, and of the many people from outside the community who helped save the heart of Haisla territory from an all-too-predictable fate. One elder, James Roberston, stood up toward the end of the evening and, looking back on a momentous year in the history of his people, said the protection of the Kitlope "did this old man's heart good." A lot of other hearts were feeling pretty good too. 🐻



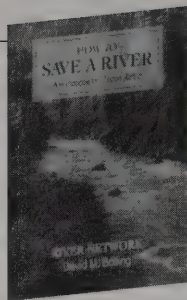
Headwaters of the Kitlope River

How to Save a River

This book is extremely useful for organizing and carrying out any cause or public campaign. David Bolling and the River Network present a cookbook format for building and sustaining an effort of public awareness and policy influence, providing tools and resources for making a river into an issue and successfully campaigning for its preservation. They distill years of experience into clear and concise procedures, explanations and advice. —Larry Dieterich

How to Save a River

(A Handbook for Citizen Action)
David Bolling, River Network. 1994;
266 pp. ISBN 1-55963-250-X
\$17 (\$21.25 postpaid) from Island Press,
Box 7, Covelo, CA 95428; 800/828-1302



While a proactive campaign is fundamental to success, it's also true that you will have to react creatively to changing political realities. This means you can't simply create a game plan and follow it blindly from A to Z; you have to respond to some of the key moves your opposition makes.

It's therefore important to know what the other side is doing, to stay informed about their strategies, and to adapt your strategies accordingly. This means, among other things, having access to information inside the opponent's campaign, and while we're

not suggesting ecological espionage we are suggesting the value of key relationships with agency personnel, opposition employees, elected officials, and anyone else close to the other side.

In September 1992, it was crunch time for the American River. A Congressional bill authorizing construction of an expandable flood control project — the "dry" version of the Auburn Dam — had cleared every committee hurdle and was being debated on the House floor. Construction and operation of the project would have wrecked part of the American River canyon, destabilized upstream slopes, and laid the foundation for a river-killing multipurpose reservoir.

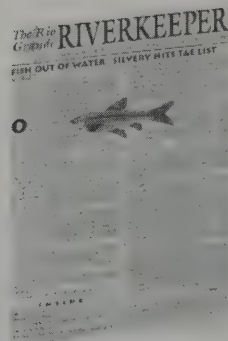
Friends of the River, American Rivers and a host of other environmental groups had been combing the Capital for last minute muscle to oppose authorization of the dam when someone suggested the National Taxpayers Union. By no stretch of the imagination an environmental lobby, the NTU is nevertheless devoted to battling boondoggles and government giveaways. Since the proposed Auburn Dam would have provided twice the level of flood protection required by federal regulations, and since far cheaper, nonstructural alternatives were available, the NTU found the authorization bill an irresistible target to oppose. That opposition wasn't the only reason the dam was voted down, but it certainly helped and it illustrates the value of looking for unlikely allies.

The Rio Grande Riverkeeper

If you live in the Rio Grande watershed, here, finally, is the important news. From Alamosa to Matamoros, info without borders about the border. Their motto: "Mo' Better Water," their goal: restoration. If you live somewhere else but need to see a great watershed newsletter, it's *Riverkeeper*. —Peter Warshall

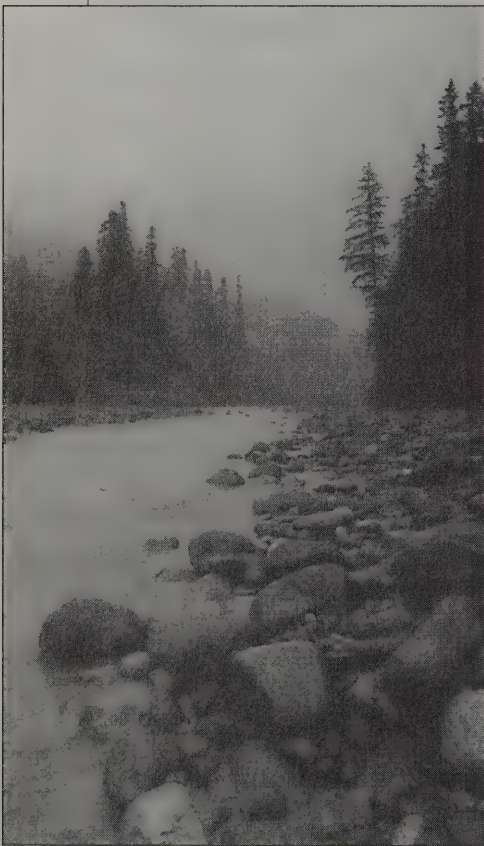
Top Ten Threats to the Rio Grande

1. Unplanned population growth, development of colonias.
2. Discharge of inadequately treated sewage effluent from border "twin cities": Juarez, Nuevo Laredo.
3. Dewatering of streambed at CO/NM line and above Presidio, by irrigated farming.
4. Dumping of toxics from maquila plants.
5. Lack of municipal, agricultural water conservation programs.
6. Non-point discharge of agricultural wastes: nitrates, phosphates, feedlot runoff, pesticides.
7. Unreclaimed mining sites — leaking toxic trace elements.
8. Watershed destruction by clearcut — in upper Rio Conchos.
9. Channelization — which has destroyed thousands of acres of riparian habitat.
10. Government inattention to the above.

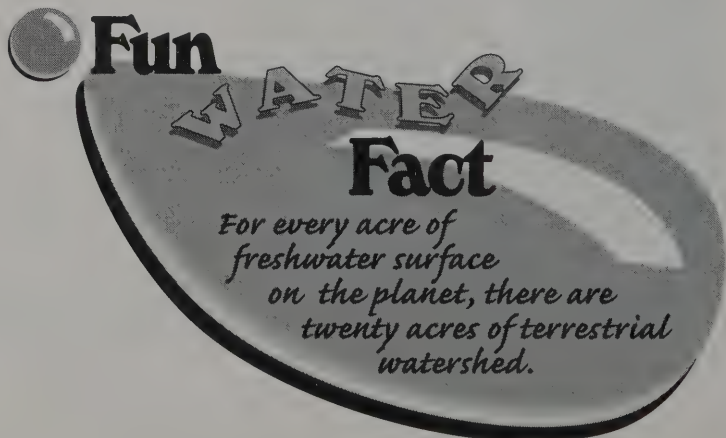


The Rio Grande Riverkeeper

Steve Harris, Editor.
\$14/year donation (4 issues) from
Rio Grande Restoration, PO Box 1612,
El Prado, NM 87529; 505/776-1369



Sauk River, Washington, a National Wild and Scenic River.

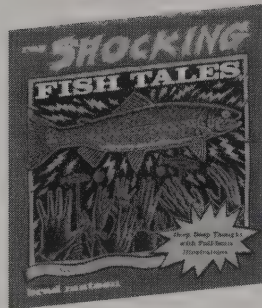
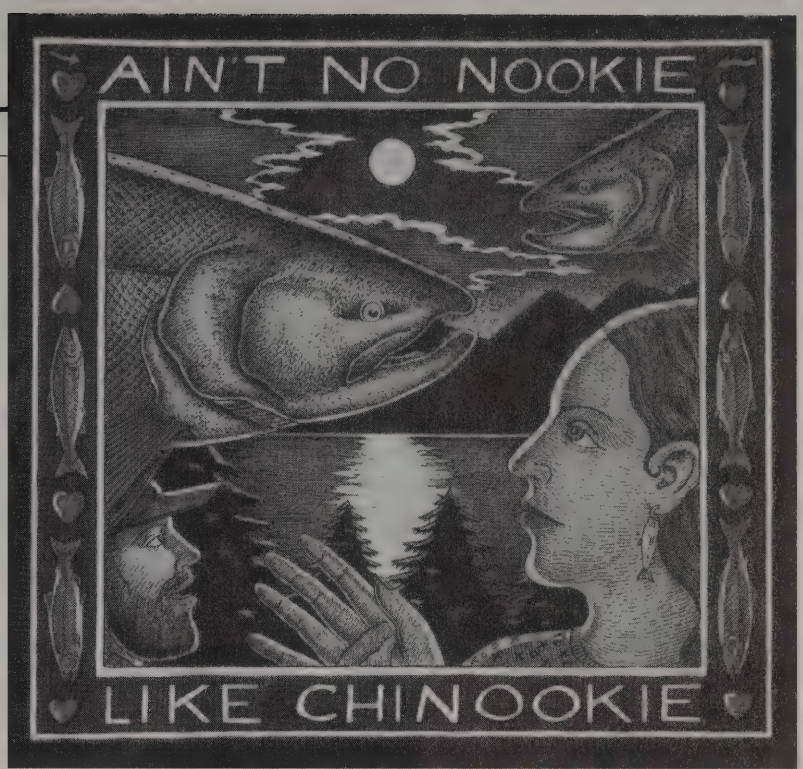


Ray Troll's Shocking Fish Tales

Magnificent illustrations and lively, irreverent writing make this the most enjoyable fish book I've read in years. The "tales" cover a fascinating array of fish lore, including some biology, history, and paleontology. —Mollie Rights

To get anywhere at all in the dating department, as well as the eating department, deep-water creatures have evolved organs of light, triggered — even at will — by the oxygen in their blood. There's plenty of oxygen in the deeps because polar circulation drives cold, oxygenated water down, and the pressure of up to four tons per square inch is no problem because the force is the same inside and out. Fish born down there have parchment-thin skin and wispy bones, but those boys in the bathyscape, with air pockets in every bit of their bodies, would be crushed like smacked gnats.

Abyssal creatures use light to attract mates and prey and to defend themselves by signaling size to a predator. It's reasonable to assume that a modestly lit but extremely ugly *Lasiognathus saccostoma*, no matter how hungry, won't mess with a six-foot *Chrisotomias photopterus* flashing like the Goodyear blimp at minus ten thousand feet. Even with the weird results delivered by evolution, the shapes and organs of the abyssal fish follow the basic rules: reproduce and eat, no matter how mean or ugly you have to be.



Ray Troll's Shocking Fish Tales (Fish, Romance, and Death in Pictures)

Ray Troll & Brad Matsen. 1991;
128 pp. ISBN 0-89815-548-7
\$15.95 (\$19.45 postpaid) from Ten Speed
Press, PO Box 7123, Berkeley, CA 94707;
800/841-2665

TEN GOOD WAYS TO RUIN A RIVER

BY
PETER WARSHALL

- ① Go to work for the World Bank, the Army Corps of Engineers, or the Los Angeles Department of Public Works.
- ② Deforest, cultivate, urbanize or mine a watershed in blithe ignorance of runoff impacts, erosion, changes in river temperature, and overdose levels of nutrients and toxics. View "non-point pollution" as a technical term of no interest.
- ③ Straighten the meanders, pave the banks, dredge the bottom to speed the floodwaters downstream.
- ④ Channelize, dredge, and regulate the river's flow with dams, locks or watergates for navigation by boats and barges.
- ⑤ Dam and divert the riverflow for drinking water, thermal power generation (especially cooling nuclear power plants), industries, irrigation, motorboats and waterskiing. Conveniently ignore or actively suppress and distort information about the impacts on the downstream users and fish nurseries in the estuary.
- ⑥ Build lots of outfall pipes at many points along the river, dumping sewage (treated or not), ag drainage, industry waste, radionuclides, pesticides and herbicides into the river.
- ⑦ Move your family onto a flood plain; cover the hillsides with roads and homesites;
- ⑧ sue the government for allowing you to do so.
- ⑨ Introduce exotic plants and animals — salt cedar, zebra mussel, Asian clams — through inattention. Stock largemouth bass or European brown trout. (It costs taxpayers over \$2 billion a year to control this menagerie.)
- ⑩ Drain down the river and shrink its channel flow by overpumping groundwater, as in Tucson. If your pumps are macho enough, you can reverse the flow, as in the San Francisco Bay delta.
- ⑪ Use the river as a political boundary, the line that your neighbor may never cross. So many wars leave corpses floating in the eddies.

My Outlaw

Well

BY SPUD

MONTH BY MONTH we watched our water bills increase. Drought-trained in water conservation, we quit flushing. We told our roses they'd have to get by on used water from the washing machine. The yard we'd repatriated from an asphalt parking lot withered to a brown, gnarled thicket. Still the bills climbed.

My father was a florist. His father, a chicken plucker, owned one of the largest greenhouses in the county. I am used to having growing things around me: I bought a book telling how to drill a well with a hand auger.

A local geologist/hydrologist said, Yep, there sure was water in our hillside; he knew of productive wells "not more than three hundred feet." The dream of a hand-dug well receded. I couldn't imagine myself hand-twisting an overgrown screw 300 feet into the ground and lifting the debris from the hole every five feet.

Maybe hiring a contractor to do the drilling wasn't that bad a notion. Especially since only a licensed well-driller could get a permit to drill a well in our state. Picking a spot away from sewer pipes and septic-tank leachfields was a tricky business, as was sealing the well to prevent contamination of subsurface waters.

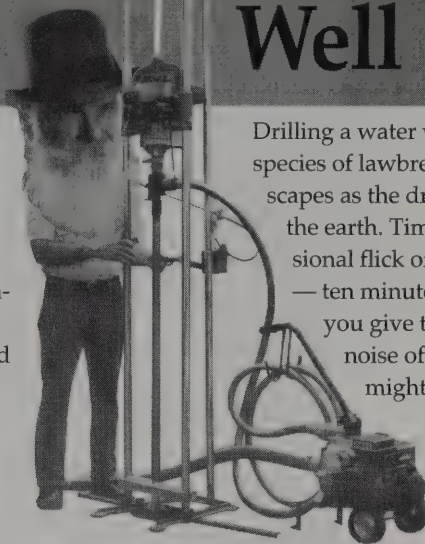
Drilling contractors got paid by the foot. One of these allowed that while he couldn't make any promises, it was likely he could get us a proper well for \$8,000 — maybe \$10,000 — including pump and piping. Gulp!

I stalled for a couple more years. But when the rates jumped again, a few of us decided to throw in together and buy a small portable drilling rig. We'd share the cost and help drill each other's wells.

We settled on a DeepRock Hydra-Drill — very popular among clandestine agriculturalists. A lawn-mower-sized gasoline engine mounted on seven-foot rails delivers slow-turning power to hollow, water-conducting drill stems through a clutch and transmission. The guy in the DeepRock video is able to drill six or eight feet an hour.

Since the rig was going on my credit card, I got to drill the first well. For twelve feet or so, the drilling went just like the video. At thirteen feet we hit shale. Progress slowed. One by one, the neighbors drifted away.

When the first rain train out of Alaska hit in November, I was still drilling. Though I had sent away for heavy-duty mining bits, progress was being measured in inches per hour. My devotion was waning. Many times my undisciplined soul wondered whether, if I could stretch my arm down the hole like Rubberman, I might dig more quickly with a dental pick.



Drilling a water well in my part of the world is a Zen species of lawbreaking. Your mind wanders many landscapes as the drill stem slowly grinds its way through the earth. Time loses meaning. There is only the occasional flick of the rig's winch handle, then waiting — ten minutes, twenty minutes, an eternity — until you give the handle another turn. The deafening noise of the thing frightens off any wildlife that might provide a moment's distraction. There is only you and the rig.

Then, at sixty-seven feet, the drill stem seemed suddenly to be falling into the hole. I had grown used to incremental progress; it felt like the rig was broken. I added another five-foot section of drill stem: it too disappeared into the hole. And another.

The borehole debris changed from flakes of shale to water-washed grains of sand. A professionally drilled well had come up with good water flow from the same formation at ninety feet, the neighbors told me. As clouds gathered in the west to give us another drenching, my hole in the ground had hit real water. ☘

LET ME ADD a few technical words for your consideration.

- The DeepRock Hydra-Drill is best used for drilling small (four-inch) wells that use jet pumps to "push" the water out. While this arrangement is not energy-efficient, it may be all you need. However, if you want to run your water system with solar electricity, you need a six-inch hole in order to use an energy-efficient submersible pump. DeepRock has a six-inch rig; if you are not drilling through rock, it might do the job for you. Call Slade or Gary, they're friendly and know what their rigs can do. For most six-inch bores (four-inch wells) you'll be better off hiring a trailer-mounted drilling rig.

- The risk of groundwater contamination is serious. Leave room around your well casing to seal the well with concrete to a depth of twenty feet. This will also protect the well from contamination by surface runoff. If you are going to use the water for more than irrigation, toilets, bathing and washing, you must have it tested regularly by a reliable lab.

DeepRock

2200 Anderson Road, Opelka, Alabama 36802, 800/633-8774
(In AL: 800/333-7762; outside US: 205/749-3377).
Fax: 205/749-5601. Telex: 593461 DeepRock Opel

Wells and Septic Systems

Max & Charlotte Alth. TAB Books, 1992;
262 pp. ISBN 0-8306-2136-9
\$16.95 (\$20.90 postpaid) from TAB/McGraw-Hill, Retail
Order Dept., 13311 Monterey Avenue, Blue Ridge Summit,
PA 17294; 800/822-8138

Waterhole

(A Guide to Digging Your Own Well)
Bob Mellin. 1991; 75 pp. ISBN 0-935902-21-X
\$8.95 postpaid from Balboa Publishing, 11 Library Place,
San Anselmo, CA 94960

The Dammed

This book attempts a comprehensive history and analysis of humankind's efforts at river control. Fred Pearce begins with the Fertile Crescent and closes with man-made rivers flowing through the Sahara, and the Rocky Mountain Basin flooded to sate California's thirst. Dam builders are self-validating; dams are too often seen as the solution to underdevelopment, aridity, floods, and famine. As dam sights are completed, engineers and bureaucrats are increasingly willing to undertake unnecessary, ill-conceived, dangerous projects. The resulting siltation, inundation of fertile farmland, destruction of fisheries, low power output, overirrigation, and salinisation destroy land and lives with no sustainable replacement. Pearce suggests that instead of massive constructions, the solutions may lie in ancient methods of managing flood plains and extracting water. We must forge a truce between our technical ability and the ancient's ability to respect the long-term health of the land. —Andrew Needham

■ This does not mean looking always for small solutions to problems. It means looking for genuinely effective solutions. And it means taking the long view. Large-scale transformation of the landscape is not a phenomenon of the modern world. The systems of terraces, floating gardens and raised fields in the Americas were vast feats of engineering. . . . The Bengalis didn't think small either when they redesigned the Ganges River delta simultaneously to prevent floods and fertilize crops, but they thought effectively, and they built to last.

■ The people of the Thar Desert appear caught between two worlds. Their old ways of a strictly ordered caste society, ancient lore and technology, allowed them to live in extraordinary numbers in this hostile environment. Their way of life was not ossified, but it did impose tight limits. Those limits are coming under increasing pressure from outside in the form of roads and water pipes and canals and scientists anxious to help them with 'improved' water technology or better crops. The eventual result is almost bound to be the depopulation of the Thar. The harder India works to develop and 'green' the desert, the more it seems destined to destroy its life-support system.

■ The true rationalists are those who attempt to see the whole picture, to view a



The Dammed

Fred Pearce. The Bodley Head, UK, 1994; 376 pp. ISBN 0-370-31609-6 \$39.95 (\$42.95 postpaid) from Trafalgar Square, PO Box 257, North Pomfret, VT 05053; 800/423-4525

river as part of a wider world, rather than as a piece of hydraulic engineering. As Phil Williams pointed out, large dams are an experimental technology, and he believes the experiment has largely failed. "The physical form of a natural river and the ecosystem that depends on it have evolved together over thousands of years, created by the natural flows and sediment moved from the river's watershed. The construction of a large dam destroys this balance, setting in motion deleterious changes that may take



An aerial photograph of the English Fens shows the ghostly mark of a former meandering river.

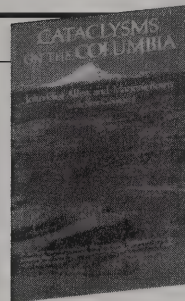
decades to become apparent, but which ultimately negate the economic benefits of the dam and bequeath financial and environmental costs for future generations."

Cataclysms on the Columbia

Imagine floodwater in places a thousand feet deep, moving nine cubic miles of water per hour at freeway speeds, emptying an enormous ice-dammed Montana lake into the Pacific Ocean in a week. The turbulent turmoil, witnessed by no doubt awed humans, shaped much of the landscape in the Pacific Northwest, though J. Harlen Bretz had a tough time convincing his fellow geologists of that. He lived long enough to savor victory over the academic establishment. Here's the story of what are now known as the Bretz Floods, complete with (unfortunately fuzzy) photographs, maps, and a tour guide so you go see — and comprehend — the results for yourself. Scientific sleuthing at its best. —J. Baldwin

● In the middle of the debate proceedings, Joseph Thomas Pardee, a geologist who was personally familiar with much of Bretz's terrain, reportedly turned to his friend, Kirk Bryan, and confided the following small but significant message, "I know where Bretz's flood came from."

Now there was a puzzle! If, in fact, Pardee knew the source of Bretz's water, why was he unwilling to make it known? The very nature of scientific advancement — so we are told — demands openmindedness and a chance to build on one another's discoveries, and yet Pardee was to remain silent on the issue for more than a decade. The explanation was simple enough: Pardee had

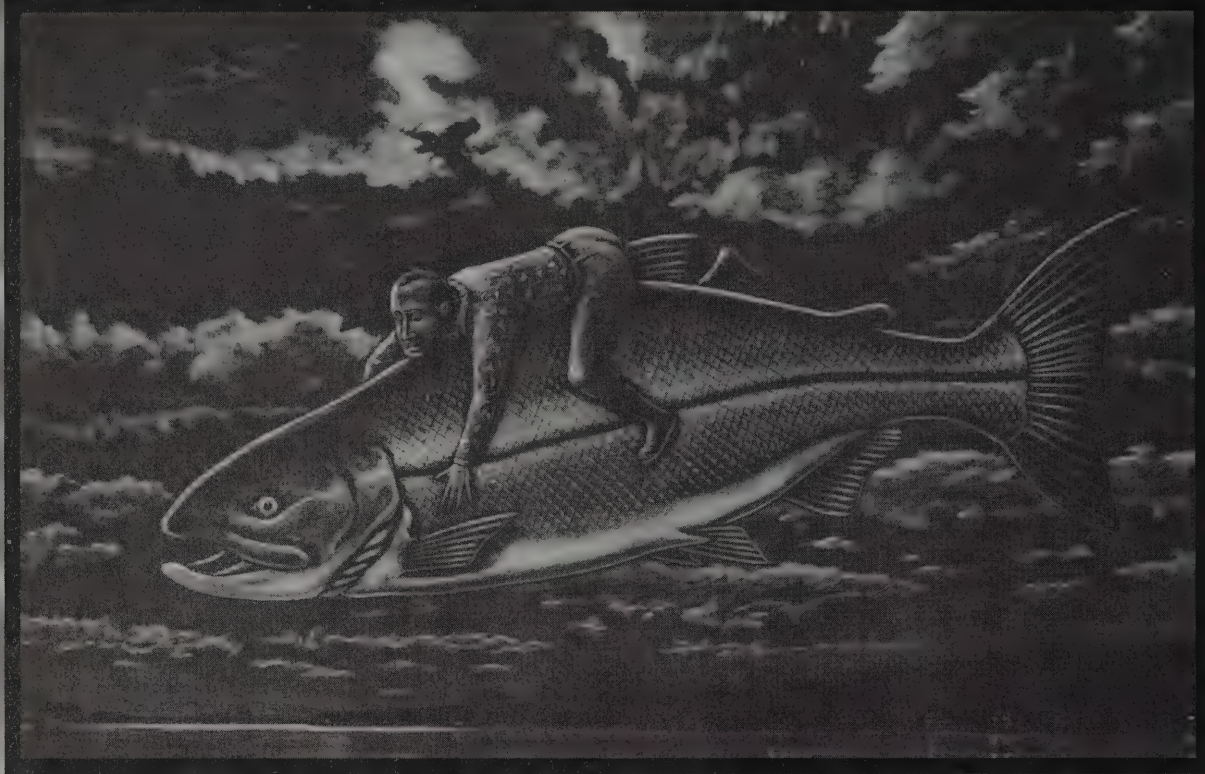


Cataclysms on the Columbia

John Eliot Allen, Marjorie Burns & Sam C. Sargent. 1986; 211 pp. ISBN 0-88192-215-3 \$14.95 (\$19.45 postpaid) from Timber Press, Order Dept., 133 SW 2nd Avenue, Suite 450, Portland, OR 97204; 800/327-5680

a career and a reputation to maintain. It was risky for any geologist to show hint of support for Bretz's offensive hypothesis; and, to add to the problem, Pardee worked for W. C. Alden, the champion of scientific hesitancy.

● Gravel bars build and move downstream during floods by the top material rolling downstream in the current and spilling over the steep lower end of the bar. Eventually, each bar is thus composed of beds that slope steeply in a downstream direction. These foreset beds are found along the sides of canyons tributary to the main river, and they dip in an opposite direction from what is normally the tributary stream's main current; in other words, they dip upstream, a clear indication that flood waters rushed up these tributaries and dumped part of their load.



Illustrations from *Shocking Fish Tales*, reviewed on p. 21.

OF MEN AND MANTAS

By HUEY D. JOHNSON
 Illustrations by Ray Troll

HE HELP ON FOR DENR LIFE BECAUSE HE KNEW IN HIS HEART THIS FISH WAS HIS

Huey Johnson has striven practically forever in the interest of the environment — with the Nature Conservancy and the Trust for Public Land, as a director of Point Foundation, as California's Secretary for Resources under Jerry Brown, and as founder and president of the Resource Renewal Institute.

He is like ice in stone: when he pushes on something, it eventually moves.

Huey is also the author of Green Plans: Greenprint for Sustainability, due in May from University of Nebraska Press. —JD

I ENJOY THE FEELING THAT NATURE BATS LAST, and so I'm drawn to those who test themselves and their craft in lives spent on the sea. I like to go out with fishermen, in a dhow in Lamu or a canoe in Alaska — places where the artistry of fishing has survived for generations. Those who navigate frail craft through treacherous seas are survivors and remarkable artisans. They're comfortable with risk; they know it's coming, and are ready. They develop the ability to take control and survive.

One fishing experience burns brightly in memory. I was camped with my family on a beach on the Sea of Cortez in Baja California, near the then-remote village of Las Bariles. The only means of getting out for some fishing was a small weathered boat that spent its days drawn up on the sand before the village. Its owner was an ancient shark fisherman who worked mainly at night.

Thousands of miles of silent desert focused down on this spot, but the sea was alive and in constant motion. Huge manta rays would leap high into the air, falling back with a boom like the report of a cannon. I thought about the old fisherman and his frail boat, working out there among those leaping creatures, and could only be amazed.

For several days I watched the man and the mantas. My children had befriended him, and one morning I walked up and squatted with the children, watching the old man mend net. He worked rapidly and with great skill, even though he was missing two fingers on one hand and one on the other. I was reminded of the adage that one shouldn't trust people who worked with dynamite if they still had all their fingers. I asked the old man if he would guide me fishing, mañana. *Si*, he said. It would be a day to remember.

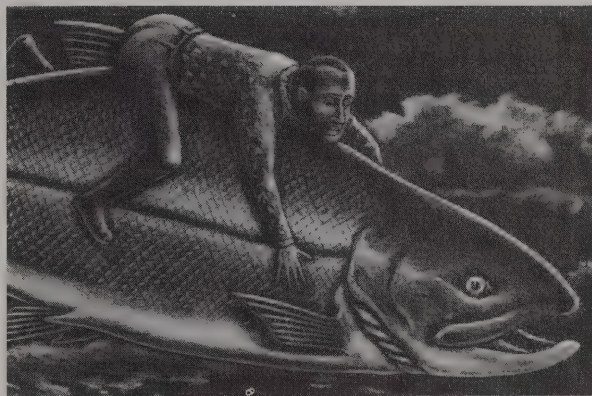
At dawn, we rolled the heavy boat down the sand on small round logs. The sea was glassy calm. Soon we were offshore, my host rowing and speaking occasionally in Spanish — a language I don't speak, but can eventually figure out.

Besides my good saltwater reel, I always take a snorkel and face mask along on these trips. I figure I can swim for miles with my face in the water. Today I was glad of my precaution, because the boat leaked badly. As I bailed — often — with a tin can, my guide was rowing way out to sea. The oars, like the boat, were cracked with weathering and looked like they could go at any minute. The mantas were sporting, mostly at a cautious distance; occasionally one of the huge rays would scare the hell out of us by leaping and crashing back to the surface very nearby.

The morning was flawless, the water gin-clear and turquoise. We stopped about half a mile from shore, and I was confident we could paddle back if the wind didn't come up. As we fished we let out a huge amount of line — all the way to the bottom. Occasionally we caught a grouper one or two feet long. With this kind of fishing you could never be sure what you'd catch — which added to the pleasure.

Suddenly my companion was worried. He pointed into the water at a school of mantas passing beneath us. Each of them looked considerably longer than our boat. The tip of my rod lunged downward, and I felt a strong surge on the line. I saw that a manta had brushed against my line.

Mantas have two horns that protrude straight out from the fronts of their heads; my line was running up between the horns of a huge beast swimming away from the boat. My hook was rapidly rising from the bottom as the line fed between the ray's horns. Good grief, I thought, if the manta keeps going, the hook could easily snag him; which it did. The ray immediately exploded into a frenzy of action, charging off at high speed. The bow of the boat made a white V through the waves as we raced along after the snagged fish.



We were towed along thus for some time, heading further out to sea and making good time at it. The manta showed no signs of tiring. The leaky boat was filling fast, and I tried to bail while keeping the rod in the boat. When the shore had receded in the distance, I decided to cut the line. But as I reached for the machete, my guide snatched it away: having chased the manta this far, he would have none of it. He rubbed his stomach and pointed at the

ray, obviously hoping we would land it. Frankly, I didn't, but he wouldn't let me have the knife, so there I was.

The old fisherman had a homemade harpoon of re-bar — the iron used to reinforce concrete. He knocked the rust off the point with a brick and tied its line to the gunwale, at the ready in case the manta got near enough to harpoon. The line was a frayed rope about fifty feet long.

Eventually the ray came in close, and he stuck it with the harpoon. This sent the fish off on a new charge in the direction of a kinder shore. At length my guide brought it closer to the boat, at which point the harpoon came loose. I was still hooked onto the manta with the fishing line, but I had put the pole down during the harpooning episode, and now had a wild time catching up with it as it bounced madly around in the bottom of the boat.

It took me a while to maneuver the ray in closer to the boat again, at which point my companion managed to harpoon it once more. This time the harpoon held. The fish surged away,

pulling the short harpoon line taut. The little boat was a cork on a short string, bobbing along just above the huge manta.

The fisherman stood on the rail and turned the boat sideways with his feet, making the fish drag its whole length crosswise through the water. This would tip the boat up and bring it dangerously close to flipping, at which point he would turn the bow back toward the ray while I leaned

way out the other side, trying to provide a counterbalance to the pull of the fish. And away we would go.

Again and again my companion fought the ray, then turned the boat with his feet when the surge threatened to tip us. Amid this pandemonium, I dutifully bailed water, occasionally leaping to the rail of the leaking boat to help keep us from flipping. After half a dozen close calls, I realized that this fellow had handled many a large fish perched just in this position, on the rail of his bobbing cork of a boat.

At last the ray came in close enough for the fisherman to kill him with a quick stroke of the machete. He stood looking down at the dying fish for a moment, then invited me to help him get it in the boat. This I refused to do, since it looked to me to be wider than the boat was long, and I figured it probably weighed several hundred pounds. The horizon was just a gray blur in the distance, and the last thing I wanted was that huge fish inside our small, leaking vessel.

I wanted to tow the fish as we rowed, but my guide said *No! Tiburon*. The growing pink cloud of dilute fishblood might lure sharks. And I recalled a description from Captain Cook's diary of the day in 1776 when he discovered Christmas Island in the mid-Pacific. The sharks kept striking at the oars as his men rowed into the lagoon. If sharks bit at oars

they would certainly bite any portions of the ray hanging out of the boat.

In or out of the boat, that ray was going to leave a blood trail. We would have to bail as we went, and that meant blood in the water. The ray in the boat was the worse choice. So I stood firm with my refusal to help to bring it aboard.

Expressionless, my companion surveyed the situation. Then he grasped the ray's gills and began to rhythmically rock the fish and the boat at the same time. Before long he had the boat dipping down several feet, then rocking back the other way with the fish rising alongside. With a sudden shout, he sprang upright, heaving with all his might, and the fish slid into the boat. A good portion of it hung out on each side.

The boat settled low in the water, and I tightened my face mask and fastened on my snorkel breather. But the victorious fisherman had a great, cheerful grin on his face, and was chattering away about what had just transpired. I wished I understood Spanish well enough to know exactly how he felt at that moment. Was it the biggest fish he had ever caught? Looking at it lying there, almost overwhelming our boat, I wondered if it was the biggest he'd ever seen.

Finally we started in, my partner sitting on top of the manta and rowing as I did my best to bail. We took turns rowing, and labo-

rious work it was, sitting on the dead ray with the oars striking the water at a bad angle. I just hoped the wind wouldn't come up and create waves; we rode mere inches from the water. I surmised we were wed to that manta ray now, since I doubted that we could lift it out of the boat without capsizing. My partner had stretched his experience beyond the lessons of his lost fingers. Still, in that situation he was the partner to be with.

THE WHOLE VILLAGE came out to see our catch.

Many hands helped to drag the boat up the beach, and the fisherman's tale was told with great gusto. When I came back later on, all that remained of the manta was its skeleton; the villagers had stripped the meat from it and left the rest for the tide and the crabs to finish.

Perched precariously on the edge of that boat, pulling in a bit of harpoon line when he could, playing it out again as the fish fought for its life, the fisherman had met and bested a force of nature that could well have written a different end to our story.

The mantas seemed to jump endlessly that night, the boom of their re-entry rolling across the sea. I felt remorse for the one we had killed, but grateful for the opportunity I'd had to share in the fisherman's life work. ♻

Water: The International Crisis

On this planet, water is uniquely valued, able to breed contention between nations. Water is traded, used, abused, misunderstood, lied about, and frequently turned into a political tool or hidden goal. In an unassuming tone of science, compassion and understanding, this book explains a lot about world affairs, such as the real reason why the US gave up the Panama Canal. Most importantly, it clearly demonstrates how borders, development policies and land use practices have a tremendous influence on water, and hence the course of all human affairs. This book should be required reading for all of us.

—Larry Dieterich

■ The most grandiose engineering schemes known to man concern North America and the Soviet Union. Both have made ambitious plans to divert major rivers that flow north from their territory into the unpopulated Arctic regions. They would have these rivers instead flow south, into the arid continental interiors where the land is dry and the people poor.

The North American plan involves transferring between 136 and 308 cubic kilometres of water a year from seven principal rivers in Canada and three in Alaska.

Water

(The International Crisis)

Robin Clarke. 1991, 1993; 193 pp.

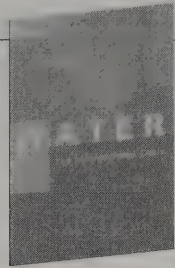
ISBN 0-262-53116-X

\$15.95 (\$18.95 postpaid) from

The MIT Press, Order Dept.,

55 Hayward Street, Cambridge, MA 02142;

800/356-0343, email mitpress-orders@mit.edu



Up to 17 per cent of their runoff would be transferred to Central Canada, the southwest United States and northern Mexico. The scheme is known as NAWAPA — the North American Water and Power Alliance — and was first proposed by a firm of construction engineers in 1964.

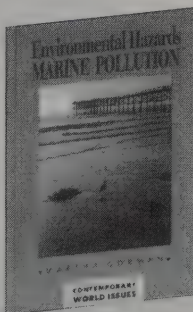
The scale of the proposal defies the imagination; there would be 240 new reservoirs, 112 irrigation schemes and 17 new navigable canals or rivers. The largest reservoir would hold 3500 cubic kilometres.

It is probably significant that the United States would receive 61 per cent of the diverted water and Canada and Mexico would receive only 20 and 19 per cent respectively. Canada, which would in effect have to undergo major hydraulic surgery for the scheme, is unlikely to be pleased to see most of the product draining away into the California desert.

Environmental Hazards: Marine Pollution

A great single source for information on aspects of ocean pollution including sewage, debris, toxic chemicals, heavy metals, oil and radioactive wastes. This comprehensive volume contains a chronology of significant events in the history of marine pollution, from the first public sewer to legislation on the Exxon Valdez cleanup; biographies of influential citizens, scientists, and activists; and a list of organizations and resources to guide the reader to further research. A generous number of charts and tables illustrate key points. Essential for students and teachers, conservationists, and anyone interested in marine studies.

—Judy Hardin



■ The seabed is littered with undetonated bombs, abandoned offshore oil rigs, outdated rocket engines, drums of toxic chemicals and radioactive waste, sunken ships, automobiles, pop cans, soda bottles, pieces of wood, and other items. While this type of debris can interfere with navigation and fishing nets, plastic debris is proving to be far more hazardous, particularly to marine mammals, sea birds and fish. Manufactured plastic products that become debris include fishing gear, shipping and packaging materials, and household plastics. Household products that can end up as marine debris include tampon applicators, condoms, disposable diapers, bags, bottles, lids, containers, and other forms of packaging. Many plastics take as long as 500 years to decompose. Their very strength and durability make them a persistent pollution problem.

Environmental Hazards: Marine Pollution

(Contemporary World Issues Series)

Martha Gorman. 1993; 252 pp.

ISBN 0-87436-641-0

\$39.50 postpaid from ABC-CLIO, Inc.,

PO Box 1911, Santa Barbara, CA

93116-1911; 800/422-2546

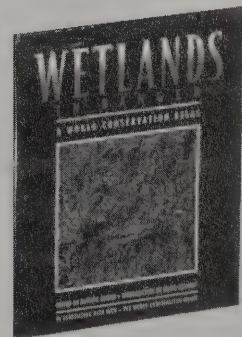
Wetlands in Danger

The finest world conservation atlas I know of. Patrick Dugan has assembled the ecology and maps and thoughtfulness in one place. A true guide to planetary healing. The inner delta of the Niger, the Banc d'Arguin (the largest tidal flats on Earth), lakes like Baikal and Tanganyika, marshes like the Everglades, peatlands of the north, swamp forests of the Amazon and Indonesia all receive proper concern.

—Peter Warshall

● Since 1957, at least 100 hydroelectric dams, including seven major dams, have been proposed for the Mekong and its tributaries. In addition to generating electricity, the proposed dams would help to exploit the estimated 39,000 square kilometres (15,000 square miles) of potential agricultural land in the delta by providing controlled irrigation water.

So far, just over a dozen dams have been finished and several others are under construction. While these have helped increase agricultural production, negative effects are beginning to be felt. Beneficial flooding during the monsoon season has been reduced. Freshwater inflow to the coastal ecosystems, including the mangrove forests, has decreased, and salinity patterns and levels have been altered.



Wetlands in Danger

(A World Conservation Atlas)

Patrick Dugan, Editor. 1993;

187 pp. ISBN 0-19-520942-7

\$35 (\$37 postpaid) from Oxford University Press, Order Dept., 2001 Evans Road,

Cary, NC 27513; 800/451-7556

Thoreau on Birds • The Wind Birds

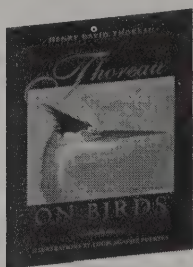
Henry David Thoreau wrote nearly obsessively during different periods of his life, and chronicled an enormous amount of his sense experience. This book (originally published in 1910 as *Thoreau's Bird-Lore*) culls entries about birds from his voluminous journals, and organizes the fragments by group: Pigeons, Flycatchers, Finches, and so on. When Thoreau made these journals in the 1850s, European settlers had been hacking at New England's forests and inhabitants for a full two centuries; still, a lot of nature remained. Thoreau's descriptions, and his insights into elemental force, are hypnotic. This beautifully designed book is easy to pick up, hard to put down.

About one hundred years later and two hundred miles to the south, Peter Matthiessen wrote a series of essays on birds that live on and around shores. *The Wind Birds*, originally published in the *New Yorker*, became a classic of the literature. In paperback now for the first time, these loosely structured essays convey with deceptive ease nearly everything known about these birds. The organizing principle seems to be awe. —David Schneider



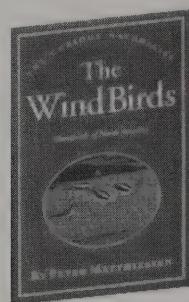
Black-Necked Stilt. —*The Wind Birds*

■ Most shorebird eyes are laterally placed, enabling them to see equally well up, down and in all directions. (The owls, which do not have to concern themselves about attack, have eyes facing directly forward, while the down-directed eyes of the bittern face forward only when it stands, as it is wont to do, with its bill pointed at the sky.) The eyes of the woodcock, however, crowd upward toward its crown and are set slightly to the rear, the better to detect foul play which might come at it from above and from behind; as a result, its cerebral axis is so far tipped back that its brain is almost upside down. That it actually sees better backward than forward may or may not account for the tendency of this peculiar bird to collide with tree limbs. —*The Wind Birds*



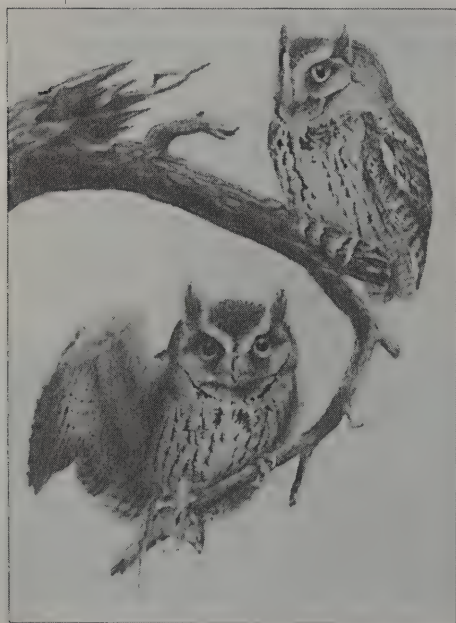
Thoreau on Birds

Henry David Thoreau. Beacon Press, 1910, 1993; 510 pp. ISBN 0-8070-8520-0 \$25 (\$29.25 postpaid) from Putnam Publishing Group, PO Box 506, East Rutherford, NJ 07073; 800/788-6262



The Wind Birds

(Shorebirds of North America) Peter Matthiessen. Chapters Publishing, 1967, 1994; 168 pp. ISBN 1-881527-37-9 \$12.95 (\$15.95 postpaid) from Chapters Bookstore, 2031 Shelburne Road, Shelburne, VT 05482; 800/892-0220



● October 28, 1855 As I paddle under the hemlock bank this cloudy afternoon, about 3 o'clock, I see a screech owl sitting on the edge of a hollow hemlock stump about three feet high, at the base of a large hemlock. It sits with its head drawn in, eyeing me, with its eyes partly open, about twenty feet off. When it hears me move, it turns its head toward me, perhaps one eye only open, with its great glaring golden iris. You see two whitish triangular lines above the eyes meeting at the bill, with a sharp reddish-brown triangle between and a narrow curved line of black under each eye. At this distance and in this light, you see only a black spot where the eye is, and the question is whether the eyes are open or not. It sits on the lee side of the tree this raw and windy day. —*Thoreau on Birds*

Screech Owls. —*Thoreau on Birds*

Whimoret. —*The Wind Birds*



Earth's Insights

Modern ecology is a concept that grew directly out of Darwin's theories. However, the ethics that underlie ecology appear in most ancient belief systems, such as Christianity, Buddhism, and Australian Aboriginal Dreamtime. In an ambitious and mostly successful project, environmental philosopher J. Baird Callicott draws from these and other belief systems in his search for an overriding ecological ethic, supplementary to all belief. Callicott first undertakes a survey of the ecological ethics implicit in indigenous belief systems. He then explains how the breakdown of modernist Western science and philosophy — Newton and Descartes positing man as separate from nature — allows for a redefinition of man's role in relation to his environment. The redefinition he sees finds its roots mainly in the idea of a global shared land ethic. Callicott then presents campaigns, such as India's Chipko movement, that exemplify the land ethic. Callicott ultimately develops a vision of multiple independent belief systems supporting each other in humanity's effort to live more sanely.

—Andrew Needham

• The world's indigenous and traditional systems of thought must create a network of environmental ethics — each a jewel, with

its own unique color and composition, reflecting the light of all the others. Connecting all the eyes of this biospherical network of recovered traditional and indigenous environmental ethics — binding them into a coherent whole — is a common thread, the emerging postmodern worldview and its associated evolutionary-ecological environmental ethic. This common thread taps into a different facet of each: into the Buddha-nature of plants . . . into Australian aboriginal increase ceremonies; into the North American Indian Great Spirit and Mother Earth, with all their children; into the *Bhagavad Gita*, the *Tao te ching*, the *Torah*, the *Kumulipo*. As citizens of one planet and as denizens of its many cultural worlds, we hold the fate of the earth in our hands. And of all the means available to save it, none are so powerful or so resourceful as our collective stock of traditional ideas and ideals.

Earth's Insights

(A Survey of Ecological Ethics from the Mediterranean Basin to the Australian Outback)
J. Baird Callicott. University of California Press, 1994; 285 pp. ISBN 0-520-08559-0
\$35 (\$38 postpaid) from California/Princeton Fulfillment Services, 1445 Lower Ferry Road, Ewing, NJ 08618; 800/777-4726



Bird by Bird

There are a lot of books on writing out there, most of which are useless to the beginning writer because they try to teach rules of good writing. In *Bird by Bird*, novelist Anne Lamott draws on her experience as a writer and teacher of writing to focus on the real problems a young writer must deal with: where to find material, how to get oneself to write it down, and how to deal with how horribly bad the first (and following) attempts will probably seem. She provides rules of thumb to help a writer keep working and discovering for himself or herself. The book reads like advice from an old and sympathetic friend.

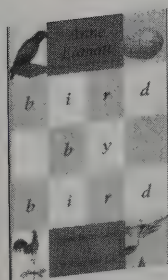
Bird by Bird will make you laugh out loud, and will soothe the feeling that, somehow, you took a wrong turn in your life when you decided to become a writer. —Wade Fox

• For me and most of the writers I know, writing is not rapturous. In fact, the only way I can get anything written at all is to write really really shitty first drafts.

• Perfectionism is the voice of the oppressor, the enemy of the people. It will keep you cramped and insane your whole life, and it is the main obstacle between you and a shitty first draft. I think perfectionism is based on the obsessive belief that if you run carefully enough, hitting each step-

ping-stone just right, you won't have to die. The truth is that you will die anyway and that a lot of people who aren't even looking at their feet are going to do a whole lot better than you, and have a lot more fun while they're doing it.

• Writing is about hypnotizing yourself into believing in yourself, then unhypnotizing yourself and going over the material coldly. There will be many mistakes, many things to take out and others that need to be added. You just aren't always going to make the right decision. My friend Terry says that when you need to make a decision, in your work or otherwise, and you don't know what to do, just do one thing or the other, because the worst thing that can happen is that you will have made a terrible mistake.



Bird by Bird

(Some Instructions on Writing and Life)
Anne Lamott. Pantheon Books, 1994;
240 pp. ISBN 0-679-43520-4
\$21 (\$23 postpaid) from Random House,
Order Dept., 400 Hahn Road, Westminister,
MD 21157; 800/733-3000

Life on the Edge

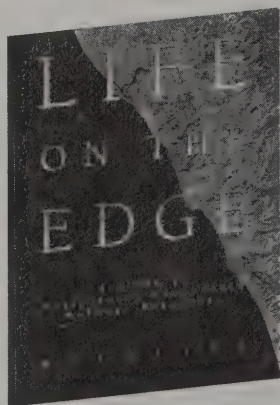
California may not have the greatest acreage among the contiguous states, but it encompasses the greatest range of biological communities. Native Americans gardened this marvelously abundant territory sustainably for thousands of years, but after the Gold Rush it was occupied by a culture determined to subdue to human will every living thing that walked, crawled, flew, swam, or simply blew in the wind. The resulting devastation surrounds us today. California's fate, of course, is no different from that of other states — it's just more astounding and depressing because it's on a vaster scale. Every state or region needs a book like this. In the meantime, anybody in the West, at least, can study this one and weep — and then go out and do something about it.

Life on the Edge is an impressive piece of research writing and a gorgeous and heartbreaking description of what we are losing in current lifetimes. Heavily subsidized by Southern California Edison (a utility with at least part of its heart in an ecologically right place) it includes wonderful color pictures throughout; evocative descriptions of the life and habits of each species; accounts of their decline; wrenching maps of their usually tiny, marginal habitats; and authoritative essays on the complex ways in which the development of California has destroyed its wildlife. There are endangered mammals like the relatively well-known salt marsh harvest mouse, and the California wolverine. The northern spotted owl is here, of course — a charming denizen of our shrinking old-growth forests — along with the bald eagle and the condor, but so are dozens of others, including the bank swallow — endangered by our propensity to lining streams with concrete. Amphibians, disappearing worldwide on an alarming scale for reasons not yet

fully known, are amply represented; so are salmon, trout, and less glamorous fishes, and invertebrates like shrimp, crayfish, and butterflies. Marine mammals are now widely beloved but still in danger; those headed for extinction include some whales, seals, and sea otters. Endangered plants, which are still more numerous, will evidently be treated in a subsequent volume.

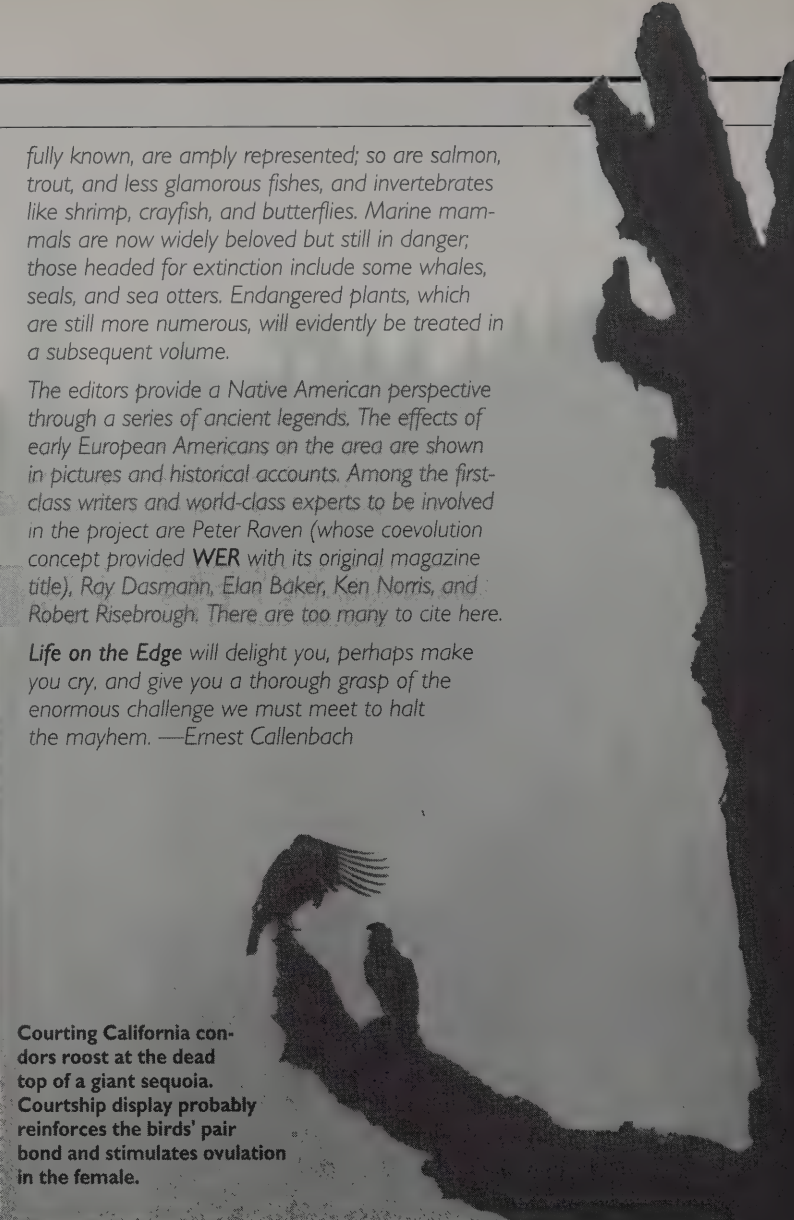
The editors provide a Native American perspective through a series of ancient legends. The effects of early European Americans on the area are shown in pictures and historical accounts. Among the first-class writers and world-class experts to be involved in the project are Peter Raven (whose coevolution concept provided *WER* with its original magazine title), Ray Dasmann, Elan Baker, Ken Norris, and Robert Risebrough. There are too many to cite here.

Life on the Edge will delight you, perhaps make you cry, and give you a thorough grasp of the enormous challenge we must meet to halt the mayhem. —Ernest Callenbach



Life on the Edge

(A Guide to California's Endangered Natural Resources: Volume 1, Wildlife)
Carl G. Thelander, Editor. BioSystems Books, 1994; 550 pp. ISBN 0-930588-70-3
\$45 (\$49 postpaid) from Heyday Books, PO Box 9145, Berkeley, CA 94709; 510/549-3564



Courting California condors roost at the dead top of a giant sequoia. Courtship display probably reinforces the birds' pair bond and stimulates ovulation in the female.



This early photograph from Pelican Island tells an unfortunate story. The two eggs seen in the lower right-hand corner indicate the time of year — nesting season. White pelicans molt during nesting season, which renders them flightless and thus vulnerable. The bird these three jovial “sportsmen” display as a trophy has a broken wing, suggesting it was a victim of foul play.

A Green Hawai'i

Every bioregion needs its own Ecotopia — that is, an informed vision of a possible sustainable future. Now Hawaii has one, thanks to Ira Rohter, a political scientist. Rohter first authoritatively (and nonfictionally, with ample source notes) reviews the grim reality behind the tourism facade: rampant homelessness and poverty, almost complete dependence on imports (even 75 percent of Hawaii's fish comes from elsewhere!), destruction of native species, pollution, chemical-intensive agriculture, and a precarious reliance on military-connected employment. Then Rohter boldly devotes most of the book to describing in tantalizing detail a credible future for the islands: democratic, ecologically sane, culturally vivid, and largely self-sufficient. And he doesn't shrink from the task of imagining how present-day Hawaii might green itself.

For anybody who's been there, it's an immense relief to read Rohter's carefully imagined alternatives for practically everything in current Hawaiian life except the astounding beauty of the place. And where there is a vision, the people may not perish after all. —Ernest Callenbach

Diversity of livelihood opportunities.

Just as ecological systems need variety to survive, so do human systems. The demand for certain kinds of jobs — mostly lowpaying — was sharply reduced in Hawaii's diversified economy. As tourism was curtailed and then reduced to a more ecologically and socially appropriate level, fewer bellhops, kitchen helpers, waitresses, maids, tour-bus drivers, reservation clerks, salesclerks, security guards, fast-food workers and other service-economy jobs were required. With fewer large hotels, shopping centers, and highways being built, the demand for heavy construction workers (many of them from out of state) significantly diminished.

But many new jobs were created in a multiplicity of occupations that met Hawai'i's needs for locally made products, sustainable energy, affordable housing, and cultural tourism. Many are managerial, some technical, some more in contact with nature, others express artistic talents. Wai'alua's experts in energy production, regenerative agriculture, biomass conversion, and aquaculture serve as consultants for other areas in Hawai'i and the Pacific islands. A good mixture of ancillary occupations, ranging from solar technicians to accountants to craft workers have become available for Wai'alua and Isle residents.

A Green Hawai'i

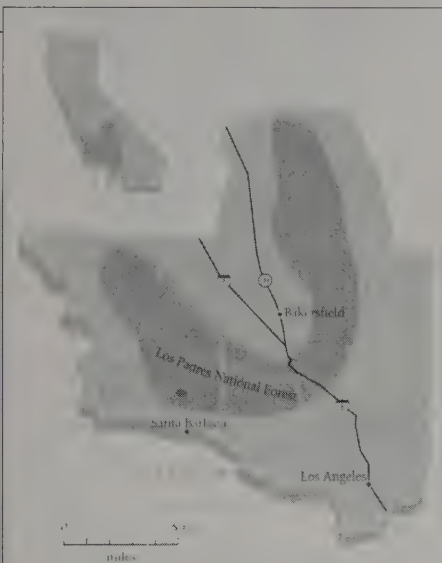
(Sourcebook for Development Alternatives)
Ira Rohter. 1992; 480 pp.

ISBN 1-878751-13-1

\$16.95 (\$18.95 postpaid) from Na Kane O
Ka Malo Press, PO Box 970, Waipahu,
HI 96794

Diverse employment opportunities in Wai'alua

- Agriculture. Family farms employing children, elders, farm hands.
- Fishing and aquaculture
- Food processing (for local consumption, restaurant and tourism). Distribution services.
- Farm supply (seed, repairs, equipment, tools, composters) and gardening centers for urbanized areas.
- Farmer's markets.
- Forestry and reforestation in Ko'olau and Wai'anae mountains. Logging. Lumber mills.
- Lumber yards and building supplies.
- Alternative energy — building and installing solar panels, wind turbines, methane generators.
- Sewage and garbage recycling for methane fuel and compost.
- Resource conservation — jobs in recycling, home-repair shops, hardware and reconditioning appliance stores.
- Affordable housing — construction advisors/educators. Built from local products when possible — lumber, recycled materials, furniture, reconditioned appliances.
- Construction of commercial buildings, mutual housing projects, hydropower and wind power systems, sewage reclamation plants, rapid transit.
- Cottage industries, handicrafts.
- Small businesses making things we formerly imported — furniture, paper products from our own forests, clothing.
- Bed & Breakfasts, campsites, inns, small resorts, hostels.
- Spas, health centers. Traditional Hawaiian healing centers. Health advisors — prevention, wellness, nutrition, spiritual.
- Local musicians, dancers, storytellers, teachers of traditional crafts.
- Naturalists and environmental educators. Landscapers, trail-builders and maintenance people for parks and wilderness areas. Nature guides.
- Teachers of gardening, home building, self-sufficiency household skills (home economics).
- Researchers in aquaculture, restoring fishponds, regenerative agriculture, recycling, alternative energy.
- Business support services — management, banks and financing, duplicating centers, electronic communications centers.



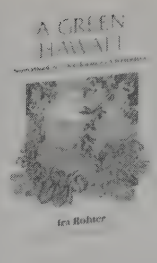
Range and Distribution
California Condor

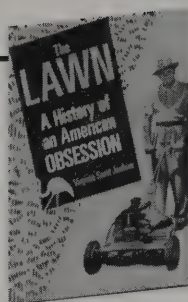
Historical Range
Current Range



Actual size

The Riverside fairy shrimp depends on an ephemeral habitat: a handful of vernal pools that form when slight depressions in the ground become inundated during autumn and winter rains. This shrimp is a male, identifiable by the enlarged second pair of antennae.





The Lawn
 (A History of an American Obsession)
 Virginia Scott Jenkins. 1994; 246 pp. ISBN 1-56098-406-6 \$14.95 (\$17.20 postpaid) from Smithsonian Institution Press, Dept. 900, Blue Ridge Summit, PA 17294; 800/782-4612

The use of women as sex objects was a constant in lawn-care advertising. This advertisement targeted men, not women.

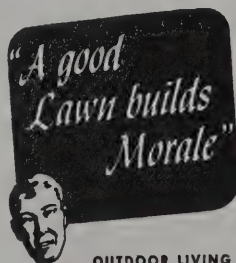
The Lawn

The next time you are edging, or clipping, or mowing, or seeding, or fertilizing or weeding or raking your lawn — you might just hang back a minute, crack a cold one and consider how you got sold this particular bill of goods. How did you become a grower of what permaculture guru Bill Mollison calls the “number one agricultural product in the world”? The whole story is in this book.

A hundred years ago almost no one had a lawn. The sales job took a while; it involved the USDA, the Garden Club of America, and golf associations; it played on Anglophilia, sexism, classism, morality and the work ethic — but eventually we Americans came to feel that a house was not a home without a lawn. Ms. Jenkins’s flawlessly researched and lively text is a model of ethnobotanical history, and it takes a particularly sharp look at the continuous human urge to control nature. This material can be infuriating. You might never finish your lawn-care job, and there, the argument runs, would go the neighborhood. —David Schneider

World War II did not entirely interrupt America’s love affair with the front lawn. This advertisement appealed to the reader at home to help the war effort.

• Advertisements for trimmers, sprinklers, and power mowers often featured young women models wearing shorts and halter tops to attract the attention of male readers. One advertisement with a picture of a woman in shorts mowing a lawn was captioned, “Really Built!” Another advertisement clearly addressed to men featured pictures of nine different women mowing lawns. A Homko advertisement pictured a woman with a low-cut blouse and skirt blowing up around her waist showing her panties as she mowed a lawn, with the caption, “There’s no better way to turn lawn work into play than with a Homko Power Mower.”



OUTDOOR LIVING
 REQUIRES A SEED
 MIXTURE ADAPTED TO
 YOUR GROWING CONDITIONS

Your local Woodruff dealer carries the mixture adapted to your local soil and climate requirements. High content of perennial grasses for permanent, weed-deterrent growth.

ASK FOR



Cottage Water Systems

The do-it-yourselfer’s dream for household water systems. *Cottage Water Systems* is a well-written, well-illustrated guide to providing your “cottage” (or rural home) with water-in and water-out. It clearly explains water supplies, water quality, water in winter (very important), and wastewater. Includes troubleshooting guides for common problems.

—Larry Dieterich

• There’s no excuse for locating a new well too close to pollution sources. Use the setbacks listed on p. 20 as guides, keeping in mind that they are minimums — increasing any of them increases the safety factor. Whenever possible, locate wells uphill from pollution sources, and slope the surrounding earth away from the well to encourage surface water to drain in that direction. . . .

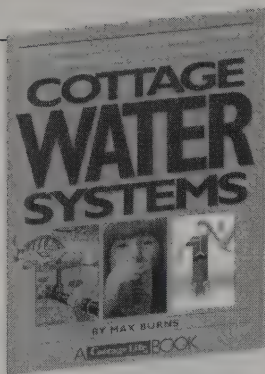
As for wastes in the well, the solution is simple — don’t put them there. Don’t work on the outboard motor near the

ANOTHER GREAT RESOURCE

Redesigning the American Lawn (A Search for Environmental Harmony): F. Herbert Bormann, Diana Balmori & Gordon T. Geballe. 1993, Yale University Press.

The widespread use of chemical lawn-care products and fears of pollution have made some Americans rethink the front-lawn aesthetic.



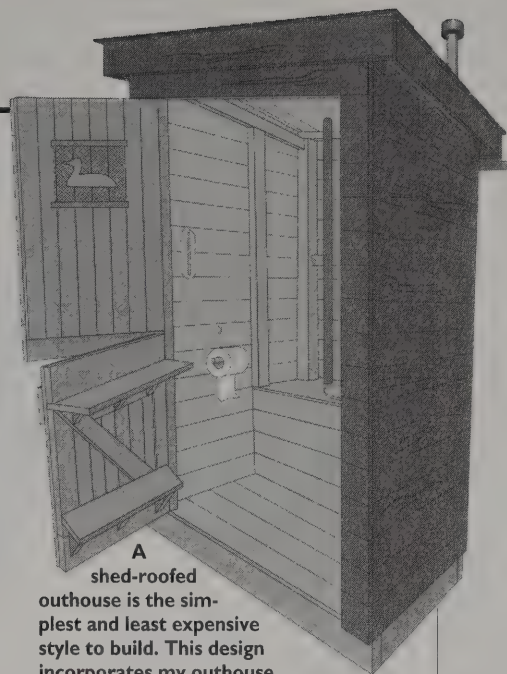


Cottage Water Systems
 (An Out-of-the-City Guide to Pumps,
 Plumbing, Water Purification, and Privies)
 Max Burns. Cottage Life Books, 1993;
 150 pp. ISBN 0-9696922-0-X
 \$19.95 (\$20.95 postpaid) from Firefly
 Books, 250 Sparks Avenue, Willowdale,
 Ont M2H 2S4 CANADA; 800/387-5085

well, or change the oil in the lawnmower, or discard wash water, or fertilize the grass or tie up the dog. In essence, anything you dump on the ground near the well could end up in your drinking water.

Absorption areas are great level playing fields for croquet or badminton matches, but the only vehicle that should ever cross the areas is a lawn mower — and that means no lawn tractors. Keep everything

from boat trailers to delivery vans away (including winter toys like snowmobiles). The weight of vehicles can crush absorption-area pipes or knock them out of level, and will compress the soil and snow above the pipes or pits. This reduces the natural insulation, which puts the system at risk of freezing. Fence the absorption area off if necessary, perhaps with a nutrient-hungry hedge, to keep innocent or deliberate trespassers away.



A shed-roofed outhouse is the simplest and least expensive style to build. This design incorporates my outhouse preferences — a dutch door, a loon cutout, and a Plexiglas skylight. You can adjust the dimensions and the hole count to suit your cottage requirements.

The Conquest of Water

It should have been a lead-pipe cinch. Once it was demonstrated that contaminated water was the cause of cholera (and a plethora of other ills), the public should immediately have clamored for a reliable source of untainted water. The great unwashed masses might also have wanted to use the clean water to clean themselves up a bit. Alas, this was neither the first nor the only instance when the triumph of science ran afoul of popular custom, prejudice and superstition. Conventional wisdom held that dirt was what protected children from disease; undressing in order to bathe was unwholesome; and the bidet would undoubtedly lead to oral sex.

Even among those convinced that clean water was in the best interests of society (they reserved judgment on bathing), controversy reigned. Arguments flew over who was best equipped to take on the expense of ensuring a safe water supply — the government or the private sector. How contemporary.

The Conquest of Water is a perfectly ambiguous title. People changed water in order to make it safe to use, and the way safe water was used changed the way people lived.

—Andrea Chase

Tasks and functions that had once been performed in public, particularly the washing of clothes and defecation, were now relegated to a distant, even somewhat barbaric past. The layout of dwellings were transformed. Rooms were adapted for specialized purposes and many customs and practices were brought into the private sphere.



'Les fleurs du mal' (1890-1895). The ostentatious decoration conceals the embarrassing aspects of these lavatory bowls, which were connected to the main drainage system.



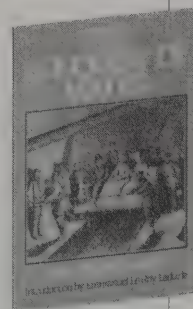
Fun WATER Fact


Each day a mammal cycles its own weight in water through its gut.

The distrust of contact with water, which had its origins in deep-rooted popular belief, was based on a symbolic code: since the bath symbolized 'the turning point between life and death', it was barely possible to take a bath more than two or three times in the course of a lifetime: at birth, on the eve of marriage before changing 'state' and shortly before being wrapped in the shroud.

The Conquest of Water

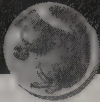
(The Advent of Health in the Industrial Age)
 Jean-Pierre Goubert. Princeton University Press, 1986, 1989; 300 pp. ISBN 0-691-08544-7
 \$39.50 (\$42.50 postpaid) from California/Princeton Fulfillment Services, 1445 Lower Ferry Road, Ewing, NJ 08618; 800/777-4726





**FAR
FROM
THE PINK
CHIFFON**

**Reshaping
Erotic
Bellydance**



INTERVIEW BY MIRA ZUSSMAN

PHOTOILLUSTRATIONS BY WINSLOW COLWELL

Carolena Nericcio has been bellydancing for twenty years. In 1987, she founded FatChanceBellyDance, a six-woman troupe that performs regularly around San Francisco. She is an improvisational artist and an innovator, with a sensibility that could revolutionize the art of bellydance.

*Mira Zussman is an associate professor of comparative religion, coordinator of Middle East Studies at San Jose State University, and the author of *Development and Disenchantment in Rural Tunisia* (1992, Westview Press). —RK*

Mira Zussman: Carolena, how controversial is your dancing? I know a film is being shot now that focuses on the controversy. Does it have anything to do with the "attitude" toward men your dancing displays?

Carolena Nericcio: The controversy is over our style — American Tribal Style Bellydance — and revolves around the issue of authenticity. "Bellydance" is self-explanatory, but "tribal" is not. It refers to working as a troupe, as opposed to performing solo, and has nothing to do with dancing in the style of any particular tribe. The "American" part acknowledges that we are undeniably continents away from the culture that created this exquisite dance and music — while at the same time it put its women under cover (from fear of misconduct by men), and denied, denies them equal rights.

We are interpreting the dance of a sophisticated culture we know very little about, and what we do know is often misinterpreted as a result of the American value system. We dancers are ambassadors of Middle Eastern culture and we are obliged to treat that culture with respect.

MZ: You've mentioned the "covering" of women. But veiling does not reflect powerlessness. One of the strengths of village dancing in the Middle East is that women are dancing exclusively for each other. They don't like dancing for men. Yet the dance form includes the use of weapons, and it expresses a lot of hostility toward men. Even in cabaret dancing in this country, some-

"It's not sexual or erotic or even domestic. It's about putting your individuality on hold long enough to trust the group and to be uplifted by it."

thing about bellydancing can be very hostile toward men. In the West, there's also an aversion to — or fear of — the veiled Middle Eastern woman who can choose to unveil and to do this highly erotic dance with weapons.

CN: There are two distinct traditions in bellydance. One is as you describe: in your village, dancing at home, in the company of other women — your peers and family — in informal gatherings. The

other is in public, in cities, for money — for an audience of (predominantly male) strangers. You can guess how the two are perceived in a traditional society. It's okay at home, but performing in public and receiving money risks serious negative social labeling. So what bellydancers in America have done is to create a dance that blends the best of both worlds. We want to perform publicly without the social stigma.

The controversy centers around merging the two styles. We are often commended, especially by Arabs, that our dance and costumes are "just like home," but in fact they're not. That's just the *feeling* it gives. In reality the costume is incongruous. A traditional bellydancer would never display a bare belly. There is always something covering it, even if it's a flesh-toned body stocking. Also, the music we use is not always authentic "bellydance" music, but again, the *feeling* is one of authenticity.

MZ: When you dance you make me homesick for the village. I don't go for this idea that your dance is inauthentic. The Middle East is renowned for trade routes, for being at the crossroads. "Tradition" always entails the blending of cultural forms. There's no purity of form — and for the Middle East there probably never was.

But you mention the place of women in Middle Eastern society. How do weapons figure here?

They are ubiquitous in bellydance. Do they represent gender wars in the Middle East, or anywhere else for that matter?

CN: A guy in a club said to me once, "Does balancing the sword on your head symbolize a phallic image?" And I said "Balancing the sword on your head symbolizes balancing a sword on your head." To us, it has no connotation as a weapon or as an element of power. In part, it comes from the Gypsy routine of anything to get another dollar.

MZ: But what could be a more powerful symbol than a sword?

CN: A gun. In this day and age, does a sword really mean anything? I don't think that it does. In the past, things were different. During Napoleon's reign, the Ghawazee dancers of Egypt would go in on the pretext of entertaining the troops, take the soldiers' swords, balance them on their heads, and then disappear with the swords while the troops got drunk.

The Ghawazee dancers were the first bellydancers from North Africa. The root of the word "Ghawazee" means "invader of the heart." I have it tattooed in Arabic script across my lower back. It makes perfect sense that these women could invade the invaders and entice them into giving up their weapons. From that angle, I think it's really good. But I firmly believe that it was just a pragmatic way to get more money.

Today, you get more attention for dancing with a sword on your head than you do for dancing with a pot on your head. The pot is very female, and the sword is very male; the sword is scarier than the pot, and the audience pays more attention. If a pot falls, something spills out. If a sword falls, you get cut up. I can see now that it does have a real sym-

bolism of power to it. But it's still a balancing act. The whole thing is still to see just how skilled the dancer is.

MZ: How do the tattoos fit in?

CN: The power is not in the swords and tattoos, it's in the women. I hate to disappoint you, but almost all my dancers had their tattoos before ever taking my classes. The connection might be that it takes a strong commitment to get something permanently etched on your body. My dancers have that commitment. I guess you could say the tattoos are like permanent jewelry. But it's a personal choice, not a mandate from me.

MZ: I have only seen a male dancer balance a tray, complete with teapot and tea glasses. And this guy didn't dance with a sword. It wouldn't even be very interesting to see him dance with a sword.

CN: It's much more difficult to dance with a tray with cups balanced on it. There's supposed to be liquid in those cups and if a dancer isn't skilled, he'll spill the contents. In contrast, the sword is actually really easy to balance.

MZ: Okay, but still, he's dancing with vessels, and you're dancing with a sword. Swords can be used to intimidate, to humiliate. Teapots can't. And this is mostly what I see in Moroccan restaurants or cabarets: male waiters pouring tea and female

dancers with sharp swords teasing men. Don't you play that game at all?

CN: I don't play the humiliation game. But public bellydance used to be performed by prostitutes, so that there was a reason to lure them in and ultimately humiliate them by taking their money. . . .

I think that the power of our style of dance, the physical part of it, comes from the degree of physical conditioning we have. I tell my students: You can have a lot of muscle in your body, you don't have to be thin. I've seen a lot of women who are really big and appear to be really fat, and who have a lot of fat on their bodies who are really strong; and they stand up straight, and they really project to the audience. Obviously, it's the muscle, and it can come in any kind of package.

MZ: Is it the muscle, or is it the confidence?

CN: The confidence must come with the muscle. Early in my training, I saw a beautifully costumed group of women doing some really neat dances, but there wasn't a lot of vigorous movement happening, and some part of me said, "It's nice, but they're not really dancing." Then things



started to evolve, and I started to work out at a gym, and I started to really appreciate muscle. I realized that I was athletic; I just hadn't ever found the right sport.

I have this thing that I only eat a certain kind of food, I only eat a certain amount of food, and I exercise all the time, and I am completely at my wit's end with my body. I'm never satisfied with it. I have a borderline eating disorder.

MZ: What do you eat?

CN: I'm a vegetarian, and I have to eat very carefully. Basically, I eat rice and beans and vegetables and fruit and bread — and jelly beans occasionally. But I can't have chocolate or fat because of the MS. That's fine with me: it'll keep me from getting too fat. I eat a really simple diet. The simpler the better, because I get really sick from eating complicated food.

MZ: What about the MS?

CN: Two years ago, I was diagnosed with multiple sclerosis. Here I've been so careful, so good to my body, and it does this! It's frustrating because the disease is so unpredictable. The symptoms — numbness, lack of balance, clumsiness, fatigue, crankiness — come and go. But strangely enough, the MS has had a positive effect as well. It made me get more focused and I decided to dance full time. I registered the business and started developing it. I make available by mail order all of the supplies we use in our performances and classes: music, costumes, jewelry, cosmetics. With the help of a grant from the California Arts Council, I started making videos as well. I thought, okay, MS just gives me a little time, and I'll still be able to take care of myself even if it takes away the thing I love the most.

I feel like I've been given a challenge. Not that I wasn't taking the dance seriously before, but I am very clear where my focus lies

now. My students, and ultimately my dancers, are really the ones who take this seriously. They are the ones who showed me that bellydance is a worthwhile thing. They have love and dedication and passion. My job is to push them hard in class, find venues to perform, and get them on the stage. People ask how we get the magic from our bodies: it's the mind and body and spirit that make it work.

I've trained my dancers to have integrity, both on and off the stage, but if there's trouble, I deal with it. There's power in that. I tell my dancers, "When you're on stage, all you have to do is dance." That's why they're there, and they shouldn't have to deal with problems.

MZ: Fat Chance anyone will mess with your dancers?

CN: I wasn't going to give the troupe some kind of Arab fantasy name that people can't pronounce or will misspell. When I was a young dancer, I was stupid enough to admit that I was a dancer when I went out to parties. I would say "I'm a belly dancer," and the guys would say "Can I have a private show?" So I used to answer "Fat chance." My friend Jim, who's a clown, said "Oh: fat chance belly dance." And I loved the way that sounded! It's tongue-in-cheek, an American phrase, and people don't forget it — they wonder about it. So that was it. People make up stories about it. I've heard so many stories of how I got that name. It's



got cadence, it's funny, and it means kiss my ass. "Fat chance you'll get anything more than a good dance show out of the dancers."

MZ: So hostility, or power, or distance, is built right into the name of your dance troupe. Where did all that come from in your own history?

CN: It's a stupid, humiliating story. I was fourteen, and had been invited to this Fourth of July square dance, and I had made this little costume, and the guy didn't show up. I was devastated; I was so shy, and already so self-negative. And when I got stood up, I just couldn't believe I had put myself in that position, and I said to myself, "Forget it. I'm not playing this game anymore."

I needed to dance and I wanted to do something solo. I didn't want to have to wait for a man to ask before I could do it. Bellydancing popped into my head. At four-

teen, I had no idea about the societal notions attached to the dance. I just wanted to do it. I checked out several teachers, but none of them seemed right for me. Then I was referred to Masha Archer and she became my teacher — my only teacher — for seven years. She is classy and tough as nails.

I needed to dance and I wanted to do something solo. I didn't want to have to wait for a man to ask before I could do it. At fourteen, I had no idea about the societal notions attached to the dance. I just wanted to do it.

We used to argue and she always won. I learned a lot from her. At Masha's there were no distractions. For three hours at a time we would just dance.

MZ: So, before you were performing, you were dancing for your own pleasure, and for the comfort of being with other women.

CN: All I wanted to do is dance. I had no thought of performing. After about two years, Masha asked me to come to her Wednesday-night salons. It was the total artist experience. My mom thought it was great, though I don't think my dad approved. On those nights, I learned how to perform, which is different from just dancing.

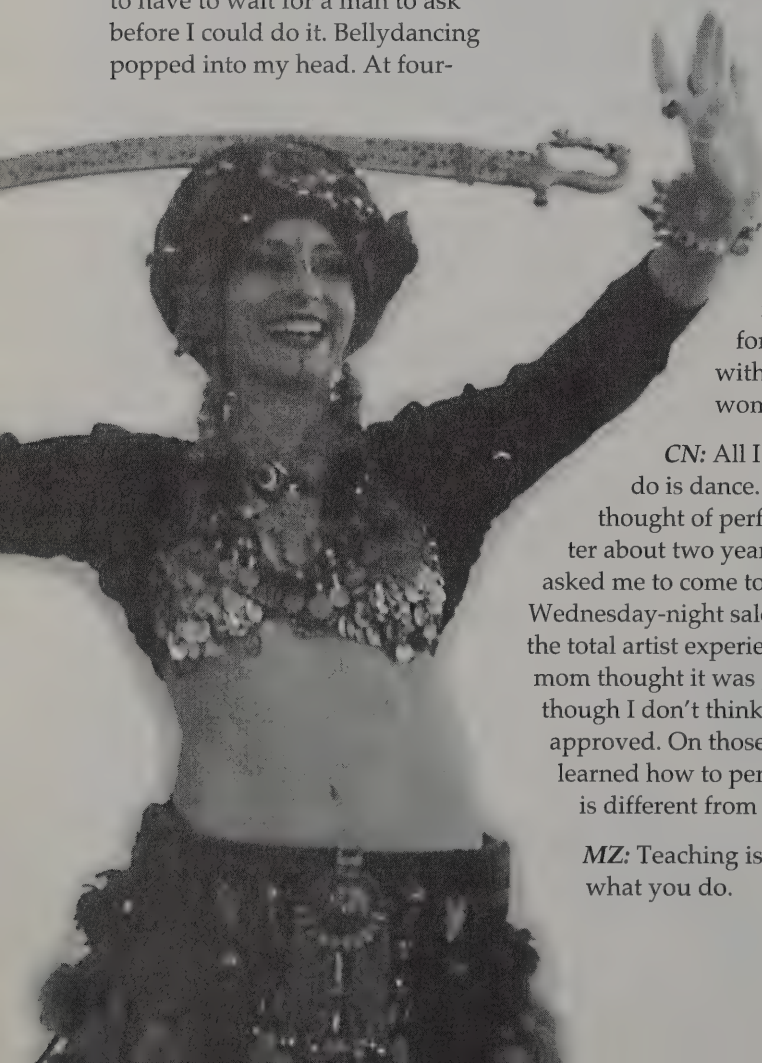
MZ: Teaching is a big part of what you do.

CN: I like teaching more than performing. I have the best job in the world. I get to see beautiful women five days a week. I watch them change out of their street clothes and transform in front of the mirror. How many people would pay money to do what I get paid to do! To me, it isn't

sexual at all — it's fascinating, like reading psychology. I watch how people walk, their posture and body language, how they approach me — *if* they approach me — and how they relate to others. I can really tell who they are and what their history is. I see things they don't see. They often say one thing, but their bodies say another. And when they start to dance, I can always tell where their body confidences and traumas are. I can see it, and some of them never let go of it. Some insist on keeping that trauma forever. Ironically, when it comes to their dancing, the confidence can stand in the way more than the traumas.

I am fascinated by the bodies they choose to have. I freak some people out because my body is so muscular and lean, but that's just my personal preference. That's not my message to the world that every body's supposed to look like that. I really appreciate people's natural bodies. And I get to work with them.

MZ: I think you underestimate your own magnetism in drawing a certain kind of woman to your classes, and into your troupe.



CN: In the moments when our dancing really works, yes: there is a magnetism. But it's for the group as a whole, for our "tribalism." The dancers form a force field around themselves, and at that moment I want people not to see it as dance at all, but rather to see that a unified group of intelligent women is a force to be reckoned with. The message is that camaraderie between women is not about commiserating about men or attracting a man. It's not sexual or erotic or even domestic. It's about putting your individuality on hold long enough to trust the group and to be uplifted by it.

The tribal philosophy is something American culture has overlooked. To us, "tribal" indicates a society that is not evolved and is somehow backwards. But tribal unity means solidarity, mutual support, collective survival. It means yielding your personal desires or big ego and discovering that you gain



Bob Giles

more as a group than you ever could out there on your own. And that's something women have always been good at. ♡

Carolena Nericcio can be contacted c/o FatChanceBellyDance, P.O. Box 460594, San Francisco, CA 94146, 415/647-6035.

OTHER GREAT EASTERN DANCE RESOURCES

Sacred Dance

Maria-Gabriele Wosien. 1986, Thames & Hudson. Explains the need for religions and cultures to incorporate dance and movement as a means to help relate to and identify with the rhythm of the outer world.

Dance, Sex, and Gender

(Signs of Identity, Dominance, Defiance, and Desire) Judith L. Hanna. 1988, University of Chicago Press. Addresses the implications of dance for gender roles and raises compelling questions about the art, including an analytical study of the social and cultural challenges presented to the dancer.

Dance, Gender, and Culture

Helen Thomas, Editor. 1993, Saint Martin's Press. Shows how dance and gender intersect within cultural contexts, while delving into various multidisciplinary ideologies including feminist, psychoanalytical, and subcultural theories.

Dance as Religious Studies

Doug Adams & Diane Apostolos-Cappadona, Editors. 1990, Crossroad Publishing Company. Choreographers, dancers

and scholars join hands exploring the multiple connections between dance and religion, and contemporary worship and ritual in modern choreography.

Women and Dance (Sylphs and Sirens)

Christy Adair. 1992, New York University Press. Highlights the consequences for female dancers of the Western dance technique in a patriarchal society.

Resources in Sacred Dance, 1991

(Annotated Bibliography from Christian and Jewish Traditions) Kay Troxell, Editor. 1991, Sacred Dance Guild. Over 300 citations from books, articles and video on the subject of sacred dance from Christian and Jewish traditions. A good starting point for those interested in dance and movement and its relationship to worship.

Serpent of the Nile

(Women and Dance in the Arab World) Wendy Buonaventura. 1994, Interlink Publishing Group. An extensive history of female solo dancing and its role in the Mid-East as well as its influence on dancers and artists of the Western world, illustrated with stimulating and supportive visuals.

It's a Lot like Dancing . . .

Suffused with clear-eyed passion for the martial art of aikido and for life itself, this book presents the fluid gorgeousness of Jan Watson's photographs with Terry Dobson's wise coaching on life. Each page is a perfect moment — a zap! pow! aha! — that makes me think and touches me deeply. —Andrea Siegel

Just because someone wants to have a conflict doesn't mean you have to agree to enter into it. Put the phone down and walk away. Get your center. Come back and say, "Sorry to have kept you waiting." This might drive people nuts, but it's legal.

I think it was me who said, "You don't cut the man, you cut the devil out of his karma." Maybe I just can't remember who I stole it from.



My teacher used to teach us to look between the eyes instead of into the eyes because you can become enthralled with the beauty of the other person and be unable to deal with his attack. This other person might not be as refined as you are. All he will see is a sucker who has fallen into his eyes and

he will take your head off. So, if you have the ability to see another person's beauty, you have to avoid becoming a prisoner to it. Look between his brows.

Conflict can be resolved, it will be resolved. You can do it. You must do it. Things are very fragile. Relationships are very, very fragile. This whole thing seems solid, feels solid, is solid. But it can all end in an instant. The more you understand this, the greater the delicacy with which you will treat one another and yourself.

It's a Lot like Dancing . . .

(An Aikido Journal)

Terry Dobson, Riki Moss & Jan Watson. Frog, Ltd., 1993; 178 pp. ISBN 1-883319-02-1
\$18.95 (\$21.45 postpaid) from North Atlantic Books,
PO Box 12327, Berkeley, CA 94712; 510/559-8277

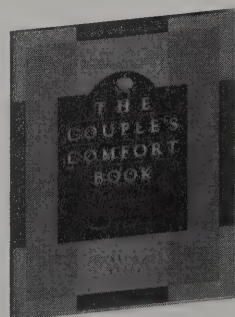
The Couple's Comfort Book

Suddenly you and sweetie are lunging for the weapons, gonna torch, bomb and annihilate what was five minutes ago such a nice little time you were having together. What's wrong? Things were so peachy, and now, you can't stand the sight of the little creep. You may need the *The Couple's Comfort Book*, a very handy, clean-up-the-mess-right-now kind of book filled with exercises and suggestions to help alleviate domestic mishap. There's an index of fifty thoughts, feelings, and breakdowns, with page numbers right alongside, so the desperate couple can turn to a particular page and find some straightforward salvation for their troubles, be they sexual boredom, an inability to connect, feeling shy, or keeping secrets. —Laurie Wagner

An indispensable part of being in a committed relationship is the practice of sacrifice.

Yet too often we perceive this act of sacrifice as losing, giving in, crying "uncle." What if you reframed this act into a spiritual practice? Mythologist Joseph Campbell said, "Here I am, and here she is, and here we are. Now when I have to make a sacrifice, I'm not sacrificing to her, I'm sacrificing to the relationship." When something has to give, when you want one thing and your mate wants another, you give in *not* for the other person, but *for* the relationship.

Notice the word *sacrifice* comes from the Latin word "to make holy." It is in this spirit you give of yourself. For example, if you give up your hockey game to pick up the kids so your mate can play racquetball and you do this while feeling, "There is another life here, the life of the relationship, and this must be tended and kept alive. I'm giving up my game not for him but for this thing called our marriage" you feel spiritually nourished instead of taken advantage of.



The Couple's Comfort Book

(A Creative Guide for Renewing Passion, Pleasure & Commitment)

Jennifer Loudon. HarperSanFrancisco, 1994;
328 pp. ISBN 0-06-250853-9
\$14 (\$16.75 postpaid) from HarperCollins
Publishers, Direct Mail, PO Box 588, Dunmore,
PA 18512; 800/331-3761

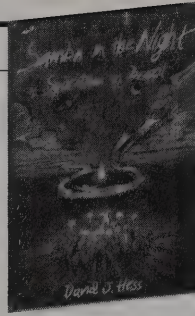
Samba in the Night

This book on Brazilian Spiritism offers delightful insights into the nature of anthropology and into the variant realities that make up the complex world of modern spirituality. Join David Hess as he falls flat on his face in his desperate struggle to understand Brazilian religious culture.

Samba in the Night is truly an adventure of the spirit! —Louis Collonge

- Spiritists (or Kardecists) tend to be middle-class and of European descent, and their spirit guides are often European intellectuals, Asian sages, or famous Brazilians. In a word, Spiritism is the “upscale” or middle-class option among the various types of spirit mediumship religions practiced in Brazil.

- Kardec (the founder of modern Spiritism) had taught that Spiritism was a combination



Samba in the Night

(Spiritism in Brazil)

David J. Hess. 1994; 214 pp.

ISBN 0-231-08432-3

\$24.95 (\$27.95 postpaid) from Columbia University Press, Order Dept., 136 S. Broadway, Irvington, NY 10533; 800/944-8648

of empirical research, philosophical reflection, and right action governed by the law of

karma and the Christian golden rule: in a sense he had synthesized science and religion, not to mention East and West.

- [Spiritists] trace their roots to 1848, when the spirit of a murdered peddler haunted a house located outside Rochester, New York. The two girls who lived in the house claimed to establish communications with the spirit, and the Fox sisters' communications with the spirit world soon attracted widespread attention and emulation. Upstate New York was known as the burned-over district for its waves of religious revivalism — including Mormons, Shakers, and the Oneida community. (It was the California — or better, the Brazil — of the nineteenth century.) The Fox sisters' feats, together with the tradition of traveling hypnotists known as Mesmerists, helped spark the Spiritualist movement in the United States.

Love and Betrayal

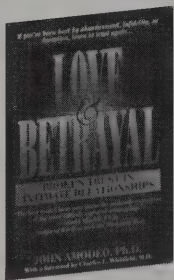
Psychiatry has attempted to fill the void left by the death of God and the collapse of stable social structures. Self-help books are like repair manuals for temperamental MGs — sometimes they work and sometimes they don't. Someday there will be effective computer programs to fix broken happiness. Until then, we will have to be content with band-aids. Life is pain. Betrayal is inevitable. And hopefully, so is love. —Stuart Chapman

- This book is not just for those who want to understand and recover from sudden, life-shattering forms of betrayal. It is also for those who want to cultivate a climate of love and trust in their current relationships so that little hurts do not grow into the quiet hostility and distancing that so often

destroy cherished hopes and dreams. Laced throughout these chapters are illustrations of the more subtle betrayals of trust, of how these “little” betrayals provide kindling for the larger conflagrations that can traumatize us.

- In a commencement address at the University of California at Berkeley, *San Francisco Chronicle* columnist Jon Carroll urged the graduates to “cherish your ignorance and husband it, because ignorance can quickly curdle into knowledge . . . if you know something, you stop asking questions, and once you stop asking questions, it's all over.”

- A growing number of people are venturing to embody caring and compassion in a world filled with deceit and betrayal. Doing so involves casting a gentle light on the betrayals shared by all of humanity — the everyday failures to look, listen, and respond to the fears and cares of our friends, family, and people whose lives we touch. Such individuals are accepting life's ultimate challenge to love well and to love wisely. Fulfilling an unspoken, sacred pact with life, they are realizing their potential to be fully alive and to extend their authentic self to others. They are committed to building trust in their relationships — and in the world.



Love & Betrayal

(Broken Trust in Intimate Relationships)

John Amodeo. Ballantine Books, 1994;

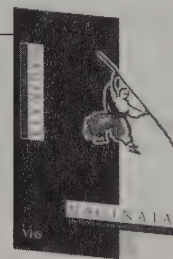
290 pp. ISBN 0-345-37856-3

\$10 (\$12 postpaid) from Random House, Order Dept., 400 Hahn Road, Westminster, MD 21157; 800/733-3000

Naginata

Until about 1600, one of the most popular weapons of feudal Japan was the naginata, a sword or curved spear on the end of a long staff. The weapon and the revised art of naginata-do were resurrected before the turn of the century as a form of physical education for girls, which is part of the reason it's still practiced almost exclusively by women. However, the theory, movement and subtleties found in the use of naginata have entered more popular arts such as kendo, judo and aikido.

Naginata: Ancient Form, Modern Motion demonstrates basic techniques and drills, standard kata (pre-arranged exchanges of this weapon system) and even a bit of armored sparring. Sensei Nakano's graceful, streamlined movement and sense of distance are classic and almost flawless;



Naginata

(Ancient Form, Modern Motion)

Helen Nakano. VHS video

\$29.95 (\$32.95 postpaid) from United States Naginata Federation, PO Box 32212, Aurora, CO 80041

her head flows along at the same level, almost detached from the intense striking and blocking techniques she executes.

The production is first-rate.

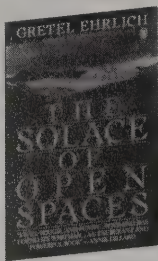
—Brian Wilkes

A Match to the Heart • The Solace of Open Spaces

One would not under normal circumstances wish a lightning strike on another human being. Luckily for the rest of us, Gretel Ehrlich was already an accomplished poet, novelist and essayist when she was struck a second time by lightning. *A Match to the Heart* contains not only a gripping narrative account of the strike and its aftermath, but sustained meditations on the phenomenon of lightning itself, on the electrochemical nature of the human body, and on the wonders and wandering of recuperation.

Ehrlich briefly describes the first time she was hit by lightning in a book of linked essays called *The Solace of Open Spaces*. To read this book for the lightning strike would be a mistake; but if you like trenchant prose about a tough life (sheep ranching) in a wild and stunning place (northern Wyoming) then it's a mistake you won't regret.

—David Schneider



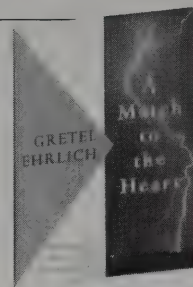
• Home — the ranch house — was about a quarter of a mile away. I don't remember much about getting there. My concentration went into making my legs work. The storm was strong. All the way across the basin, lightning lifted parts of mountains and sky into yellow refulgence and dropped them again, only to lift others. The inside of my eyelids turned gold and I could see the dark outlines of things through them. At the bottom of the hill I opened the door to my pickup and blew the horn with the idea that someone might hear me. No one came. My head had swollen to an indelicate shape. I tried to swallow — I was so thirsty — but the muscles in my throat were still paralyzed and I wondered when I would no longer be able to breathe.

Inside the house, sounds began to come out of me. I was doing crazy things, ripping my hiking boots off because the bottoms of my feet were burning, picking up the phone when I was finally able to scream. One of those times, someone happened to be on the line. I was screaming incoherently for help. My last conscious act was to dial 911.

—*A Match to the Heart*

The Solace of Open Spaces

Gretel Ehrlich. Penguin Books, 1985; 131 pp. ISBN 0-14-008113-5
\$9.95 (\$11.95 postpaid) from Penguin USA, Consumer Sales, 120 Woodbine Street, Bergenfield, NJ 07621; 800/253-6476



A Match to the Heart

(One Woman's Story of Being Struck by Lightning)
Gretel Ehrlich. Pantheon Books, 1994; 200 pp. ISBN 0-679-42550-0
\$21 (\$23 postpaid) from Random House, Order Dept., 400 Hahn Road, Westminister, MD 21157; 800/733-3000

• Piousness was not always the rule. Feuds over water became venomous as the pollution of the state grew. Ditch riders — so called because they monitored on horseback the flow and use of water — often found themselves on the wrong end of an irrigating shovel. Frank remembers when the ditch rider in his district was hit over the head so hard by the rancher whose water he was turning off that he fell unconscious into the canal, floating on his back until he bumped into the next head gate.

—*The Solace of Open Spaces*

Talking on the Water

Since 1983, Jonathan White has been holding seminars led by key environmental, spiritual and social thinkers aboard his schooner, the *Crusader*. *Talking on the Water* is a lively series of these dialogues in which the place (off the coast of Alaska), the people, and the animals in the environment surrounding the boat interplay to allow the creation of new ideas.

Ostensibly about nature and creativity, this book is actually both broader and narrower in scope. The range of ideas includes myth, microbiology, language, and conservation, but the talks always return to finding mankind's place in the world. Jonathan White orchestrates his talks well, bringing responses from earlier talks into each. The agreements, and disagreements, between people like David Brower, Ursula Le Guin, Gary Snyder, and Lynn Margulis, are useful and instructive.

—Wade Fox

• It's not the talk, and it's not the people, because you can have the talk and the people anywhere. In our culture, we forget the importance of place. You go somewhere to hear a talk on the Greek gods and goddesses, and you find out it's in the basement of a church with fluorescent lights, hideous folding chairs, and no windows. The place is absolutely ruinous, and you're supposed to talk about individuation or beauty or something.

• The idea that we are "stewards of the earth" is another symptom of human arrogance. Imagine yourself with the task of overseeing your body's physiological processes. Do you understand the way it works well enough to keep all its systems in operation? Can you make your kidneys function? Can you control the removal of waste? Are you conscious of the blood flow through the arteries, or the fact that you are losing a hundred thousand skin cells a minute? We are unconscious of most of our body's processes, thank goodness, because we'd screw it up if we

weren't. The human body is so complex, with so many parts, yet it is only one infinitesimally small part of the Gaian system, a system which is far more complex than we can fully imagine. The idea that we are consciously caretaking such a large and mysterious system is ludicrous.



Talking on the Water

(Conversations About Nature and Creativity)
Jonathan White. Sierra Club Books, 1994; 288 pp. ISBN 0-87156-515-3
\$15 (\$18 postpaid) from Sierra Club Store Orders, 730 Polk Street, San Francisco, CA 94109; 800/935-1056

The Present Moment

Thich Nhat Hanh's teaching is about how to live in the here and now. But it is mostly a delightful place to spend a while, to balance heart and mind.

It's all here: the unflinching critique of modern distractions and destructions, the stories and songs that remind us of the inner well that we share.

—Garth D. Cheff



The Present Moment

(A Retreat on the Practice of Mindfulness)

Thich Nhat Hanh & Sister Chân Không.

1994; 6 audio tape set, 7 1/2 hrs.

ISBN 1-56455-262-4

\$59.95 (\$65.95 postpaid) from Sounds True Audio, 735 Walnut Street, Boulder, CO 80302; 800/333-9185

■ The practice of mindfulness is the practice of arriving at every moment. The present moment is where life can be found. If you don't arrive there, you miss your appointment with life.

● Let us visualize ourselves as waves on the ocean. A wave might get scared: "Should I be? Shall I not be?" The wave might get a complex: "Am I inferior to other waves? Am I equal? Am I superior to other

waves?" A wave might ask the question: "Where did I begin? Where shall I end?" And the wave does not live in peace. The wave is assaulted by many notions, many ideas. The wave suffers because fear is within.

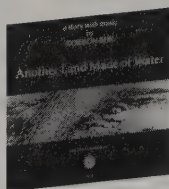
● We know it is enough to watch a few minutes of one television program to plant and water a number of seeds that do harm to

our self and our children for all our life. And we are exposing ourselves consciously to the invasion of toxins and poisons. Violence, despair and hatred have become our daily food. And in the name of freedom we allow ourselves — we allow our children — to be poisoned every day.

■ The miracle is not to walk on water; the miracle is to walk on earth. And you perform a miracle every time your foot touches the ground.

Another Land Made of Water

Storytelling is an art whose juice can go dry when we listen over the stereo rather than the fire or bedside. This tale with music is a glorious exception. I return to it regularly, and find it ever enchanting. Maine maritime folksinger Gordon Bok tells us about his meeting with the sea people, and we are shown through their music and words a world where time and language is watery and changing. Perhaps the key is in the haunting chants and melodies that braid themselves through the narrative, played on guitars and recorders with solo voice and amateur chorus. But by story's end I'm transported on a palpable tide, and reminded of the real magic in both tidal rhythms and the spoken word. —Winslow Colwell



Another Land Made of Water

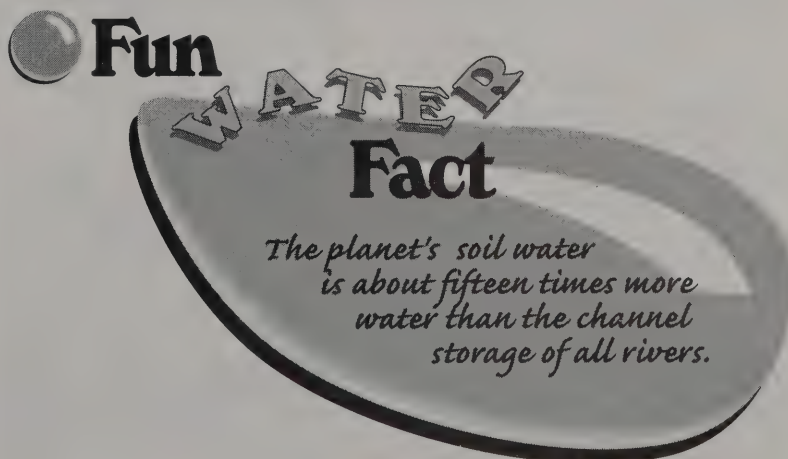
Gordon Bok. Cassette only #C-72

\$10.98 (\$13.98 postpaid) from Folk Legacy, Box 1148, Sharon, CT 06069; 800/836-0901

● I listened for a long time to the song, and many times I thought that they were directing it at me, that they wanted me to hear it. That what they were telling me was important, but a story too old and too long to be given in the framing of verses or the squared off corners of rhyme, and that while I had no tongue for it, nor ever would have, they wanted me to know it.

So then while the day blew on from grey to grey I curled up under the tide ledge and listened and watched, and tried to understand. I know I slept again, because I dreamed of the winter of the sea, I remember that. I dreamed that the song changed its flow and direction many times, and I dreamed that some of them came up to where I was sleeping, and spoke to me long and carefully in a language that is not yellow and red and brown like ours, but cold and silver.

If you are a poet, you will see clearly that there is a cloud floating in this sheet of paper. Without a cloud there will be no water; without water, the trees cannot grow; and without trees, you cannot make paper. So the cloud is in here. So we say, "A sheet of paper is made of non-paper elements." The paper is made of all the non-paper elements to the extent that if we return the non-paper elements to their sources, the paper is empty. Empty of what? Empty of a separate self. Empty, in this sense, means that the paper is full of everything, the entire cosmos. —Thich Nhat Hanh, from *Being Peace*



CULTIVATING ECOLOGICAL DESIGN INTELLIGENCE

Notes From An
Invitational Conference
at Esalen, Big Sur,
California,
October 16-19, 1994

BY STUART COWAN

The extraordinary meeting that triggered this birth announcement was marked by a unanimous, enthusiastic commitment to an effort that is urgently necessary and essentially right. I haven't felt this good about a work party since Stewart Brand and friends convened the Alloy conference in 1969.

This report marks the beginning of a regular Ecological Design feature in Whole Earth Review. People acting as designers manage the application of technology; the job needs to be done with more subtlety and understanding of consequences. WER has always attended this subject; now it's a major focus for us. We welcome good news, opinions, and suggestions for articles. —J. Baldwin

DESIGN CONNECTS CULTURE AND NATURE through flows of energy and matter. If we take ecology as the basis for designing our products, buildings, and communities, we can preserve natural capital while meeting human needs.

A new vision of ecological design is emerging, one that brings together architects, planners, engineers, farmers, artists, and many others in a shared search for the nitty-gritty design details of a sustainable culture.

Just as architecture has traditionally concerned itself with problems of structure and aesthetics, or as engineering with safety and efficiency, we need to consciously cultivate an ecologically sound form of design that is consonant with the long-term survival of all species. Ecological design proposes a partnership with nature in which environmental impacts are minimized by carefully integrating designs within wider living systems. Examples include wastewater treatment systems that employ the inherent purifying capacities of artificial wetlands, industrial "ecosystems" in which all wastes become "food" for other processes, and agricultural

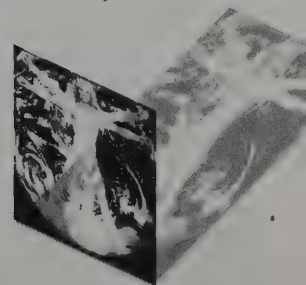
systems whose structures mimic wild ecosystems. Ecological design provides a coherent framework for redesigning our systems of energy, water, food, shelter, waste, and manufacturing.

This conference was convened to find the next step. Ecological design offers a rich source of solutions and research directions, but its practitioners have lacked a common forum to share their ideas.

The circle of introductory statements raised key themes. How should ecological design be taught, and what kind of jobs can trained students and professionals reasonably expect to hold? How can we garner institutional support for ecological design? How can we create new kinds of accounting, curricula, ecological enterprise, and interdisciplinary networks? As David Orr emphasized, "We need to drive the definition of ecological design to clarity." There was a consensus that ecological design is not an "alternative" to the dominant forms of technology and design, but the best path for their necessary evolution towards ecological viability.

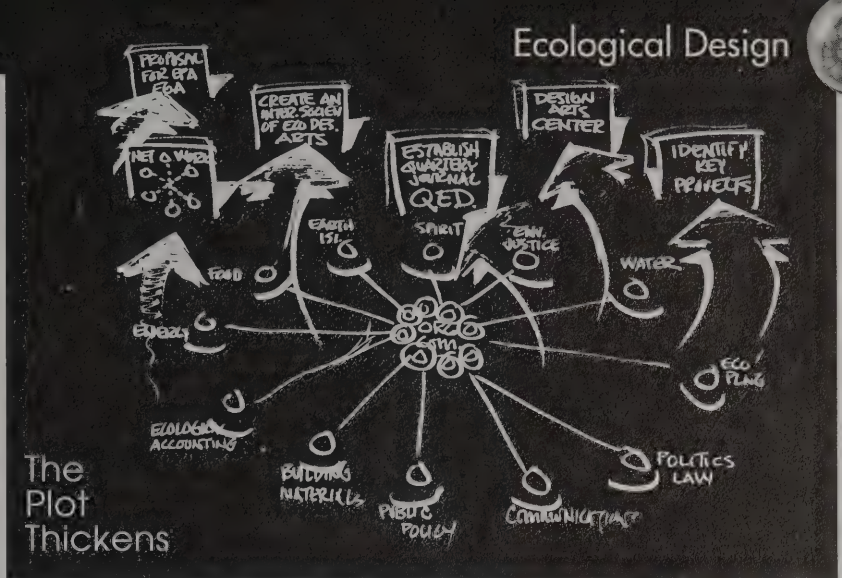
PATTERN
THAT
CONNECTS

ILLUSTRATIONS BY
JIM CHANNON
PHOTOGRAPHY BY
KATY LANGSTAFF



INTRODUCTORY STATEMENTS

- We need a "Do Tank" to teach and do ecological design.
- What is the institutional base to get ecological design mainstream?
- How can we create opportunities to make a living doing ecological design?
- How do design professionals make ethical choices?
- Perhaps we should call it the Society for Ecological Design Arts.
- Create a learning environment that matches the context.
- The insurance industry may provide an opportunity for bioremediation.
- Find a quality of life to believe in and be nourished by.
- Nature is the standard for design: we need ecological accounting.
- College-age people who "got it" need a place to use it.
- How do we build a constituency for tectonic change?
- Educate and retrain older students and practicing designers.
- What works is taking care of local community.
- The transition is here and we have the time to make it.
- Produce examples that cut across disciplines.
- Design innovative educational institutions.
- Create networks and intellectual family.
- Redesign infrastructure using ecological design.
- Convince sources of power that they need what we've got.
- We need to satisfy people's emotional need for beauty as well as scientific logic.
- Seed pods of change need to come together.
- Establish local enterprise centers for the ecological design arts.



ECOLOGICAL DESIGN NODES

To date, ecological design has been carried forward by isolated "nodes" — nonprofit research institutes, individual design practices, and special groups within universities. These nodes are deeply committed to their surrounding communities and bioregions. Their work deals with the essentials: energy, water, food, shelter, waste, ecological accounting, environmental justice, and spirituality. As conference participants described their work, it became clear that a formal network of nodes would be enormously valuable. The following nodes, each run by a conference participant, give a good sense of the range of current work in ecological design.

Bioregional Building — At the Center for Maximum Potential Building Systems in Austin, Texas, Pliny Fisk and colleagues are creating a bioregional design science. They are learning how to build homes with climate-adapted local materials that produce their own energy and water and treat their own wastes. By examining the entire life cycle of materials and products, they are finding ways to add value without leaving the bioregion, turning waste into a resource in the process.

Earth And Spirit — At the Whidbey Institute near Seattle, Fritz and Vivienne Hull and more than a dozen close associates are designing a school that will bring together

environmental and spiritual concerns. The campus itself will be a rich learning tool, its very materials and systems embodying the highest aspirations of ecological design. In this place of healing, those deeply involved in the work of creating sustainable culture will find spiritual renewal.

The Ecological Design Institute — Under the leadership of Sim Van der Ryn, the Farallones Institute has been active in ecological design since the 1970s. Its projects have ranged from an environmentally sound demonstration house in Berkeley to experiments in organic farming and solar architecture. Under its new name, the Institute is creating an ecological design curriculum for pre-K–12 at San Domenico School in San Anselmo, California. It will also sponsor an annual workshop for ecological designers.

Habitat And Commons — Chris Desser is organizing the Migratory Species Project, which will bring together communities along the annual migration route of the gray whale from the Bering Sea to Cabo San Lucas in Baja California. Coastal communities can become aware of the interdependence of life by sharing stories about the whale. Young people will be encouraged to make a pilgrimage along part of the 6,000-mile route, stopping to learn about

the significance of the whale to local cultures and ecosystems along the way.

Ecological Accounting — Deserted houses and public buildings in the town of Matfield Green, in Chase County, Kansas, are being lovingly reinhabited in a grand experiment in ecological accounting. Is it possible to live on the prairie without eroding its ecological capital? To answer this question, Wes Jackson and his fellow reinhabitants are quantitatively assessing what they take from the land — in water, soil, nutrients, energy — and what they return.

Presidio Institute — In San Francisco, the Army has recently transferred the Presidio base to the National Park Service. In response to this opportunity, Marty Krasney and the Coalition for the Presidio Pacific Center are working to establish the Presidio Institute for Sustainable Development at the Main Post. This institute will be dedicated to international and cross-cultural cooperation on sustainable development as the prerequisite for global security in the twenty-first century.

The Restoration Of Waters — Ecological wastewater treatment pioneer John Todd and his team at Ocean Arks International build diverse artificial ecosystems with remarkable purifying abilities. These systems replace energy and materials with a resilient living web of bacterial, plant, and animal intelligence. Todd is currently working on a major creek restoration project in Chattanooga, Tennessee.

606 Studio — The final year of the Masters of Landscape Architecture degree at California State Polytechnic University in Pomona. Under the leadership of John Lyle and his colleagues, small teams of students consult for government agencies on ecological planning issues. The 606 Studio has a distinguished history of ecological design pedagogy.

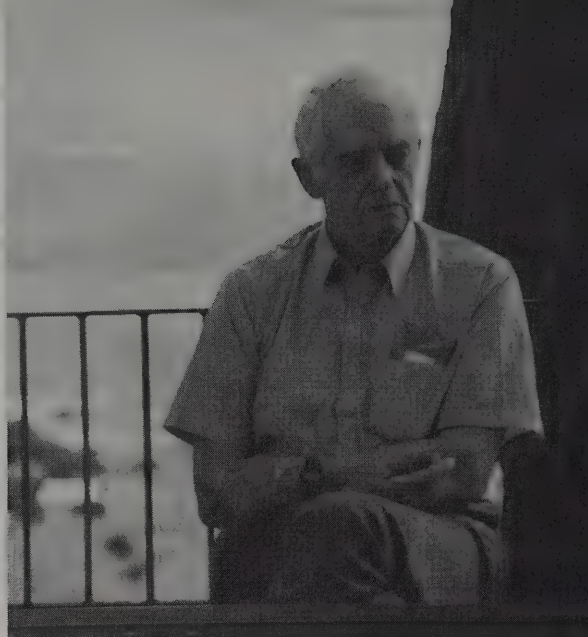


CREATING AN INTERNATIONAL ECOLOGICAL DESIGN SOCIETY

As we discussed our work, our principles, and our vision, a palpable sense of momentum was generated. Paul Hawken's suggestion that an International Ecological Design Society should be formed was met with immediate acceptance. The core Esalen group is now actively seeking wider participation in the formation of this Society. We invite comments on the Big Sur Declaration, and we welcome news from ecological designers around the world.

The Society will promote ecological design, connecting those working in the grassroots with those in academia, the business world, and the design professions. It will foster research on issues of critical importance, forge convivial links, and create new educational opportunities. The goal is to connect efforts that are presently scattered, avoid duplication of effort, and provide leadership for a new generation of ecological designers who are inheriting a world with much real work to be done but few paid opportunities to do it.

We are working to create a Quarterly of Ecological Design (Q.E.D.) that will provide a platform both for carefully refereed research and for more speculative ideas. Many participants expressed interest in



David Brower, restoration advocate and environmental elder.

an eloquent "coffee-table" book — a visual introduction to ecological design. Interest was also expressed in video and CD ROMs.

A few months ago, a group in China started an Internet electronic conference on ecological technologies. Membership has already reached two thousand. As the Society develops, we will bring an ecological design conference online.

The need for sound ecological design education at all levels is overwhelming. There is strong interest both in a campus devoted to ecological design and in creating a center at an existing university. Another possibility is a two-year Masters of Ecological Design, with the first year spent as an intern at two or three different accredited nodes and the second year at a sponsoring institution.

Our next step is to create a permanent forum for the wide exchange of ideas and information. If the Society succeeds in generating a culturally and economically diverse constituency committed to the vision of ecological design, it can exert enormous leverage on governments, universities, and corporations alike. Our task is to transform the Industrial Revolution into a twenty-first-century ecological design revolution.

The Big Sur Declaration

Ecological Design reintegrates the needs of human societies within the dynamic balance of nature. It calls for an ecological revolution as fundamental as the industrial revolution.

Conventional forms of agriculture, architecture, engineering, and technology have not proven themselves sufficient to maintain either human health or the integrity of ecosystems.

We, the International Ecological Design Society, call for a regenerative ecological design science and craft that honors the following principles:

1. Trace the ecological footprint: Set up the books for a full ecological accounting. Evaluate designs by their environmental impacts over their complete life cycle.

2. Live off solar income: Increase the renewability of energy production and the efficiency of energy use until we can provide for our needs out of annual solar income.

3. Maintain biodiversity and the locally adapted cultures and economies that support it: We take the preservation of species, representative ecosystems, and ecologically viable landscapes as a self-evident necessity. This can only be accomplished with a diversity of cultures and economies predicated on the uniqueness of place.

4. Waste equals food: Create restorative materials cycles in which all waste from one process becomes food for the next.

5. Work with whole systems: Design in keeping with the greatest possible degree of internal integrity and coherence.

6. Design must follow, not oppose the flows of life: Replace energy and materials with the self-designing capabilities of ecosystems. Allow living systems to unfold in a full expression of their creative capacities. Ecological design occurs in planetary time.

Participants

J. Baldwin, teacher, land steward, technology editor of *Whole Earth Review*

Steve Beck, Esalen Lands Manager

Anne Brower, ecological muse

Dave Brower, archdruid, conservationist, founder of Friends of the Earth and Earth Island Institute

Jim Channon, graphics shaman, ecological village designer

Stuart Cowan, mathematician, co-author of the forthcoming *Ecological Design*

Nelson Denman, musician, teacher, Green Cities organizer

Chris Desser, organizer of Earth Day 1990, director of the Migratory Species Project

Pliny Fisk, architect, founder and director of The Center for Maximum Potential Building Systems, Austin, Texas

Patrick Hallinan, attorney

Paul Hawken, businessman, founder of Smith & Hawken, author of *The Ecology of Commerce*

Fritz Hull, co-director of The Whidbey Institute, Washington, editor of *Earth and Spirit*

Wes Jackson, plant geneticist, founder and director, The Land Institute, Salinas, Kansas, author of *New Roots for Agriculture*

Marty Krasney, director of the Coalition for the Presidio Pacific Center

Katy Langstaff, builder, coordinator of the Sustainable San Domenico Project, San Anselmo, California

John Lyle, Professor of Landscape Architecture, California State Polytechnic University at Pomona, author of *Regenerative Design for Sustainable Development*

Joan Olsen, The Land Institute, Salinas, Kansas

David Orr, Professor of Environmental Studies, Oberlin College, founder of the Meadowcreek Project, Arkansas, author of *Ecological Literacy*

Ranny Riley, facilitator, founder of Life Lines

Victoria Schomer, interior designer, editor of *Interior Concerns*

John Todd, biologist, president of Ocean Arks International, Falmouth, Massachusetts, co-author of *From Eco-Cities to Living Machines: Principles of Ecological Design*

Nancy Jack Todd, editor of *Annals of Earth*, co-author of *From Eco-Cities to Living Machines*

Sim Van der Ryn, architect, director of The Ecological Design Institute, Sausalito, California, co-author of the forthcoming *Ecological Design*



Doin' the Eco Design Blues: "I've got those ecodesign blues, lookin' for my paradigm . . ."

From left to right: Sim Van der Ryn, Christopher Castle, Stuart Cowan, Nelson Denman, and David Orr.

We have established a temporary office to facilitate the establishment of the Society as a nonprofit 501(c)(3) corporation. For further information, please contact us:

International Ecological Design Society:
PO Box 11645, Berkeley, CA 94712. 510/869-5015; fax: 415/332-5808; email: ecodesign@igc.apc.org

Regenerative Design for Sustainable Development

An uninspired title and textbooky aesthetic mask what must be the best, most useful analysis of how that elusive (and possibly oxymoronic) goal, "sustainable development," might be attained. John Lyle wastes no time in wailing, villainization, or outrage. He's realistic, knowing that progress will be messy, uneven, and occasionally mistaken, with strategies and focus changing as we learn. He offers a remarkably complete synopsis of the basic problems and the form their solutions will probably take. He explains underlying principles instead of assuming you're already hip, then inspires with successful examples of applied regenerative design. In twenty-five years of assessing books of this genre, I have never encountered one as comprehensive and essentially right. —J. Baldwin



Regenerative Design for Sustainable Development

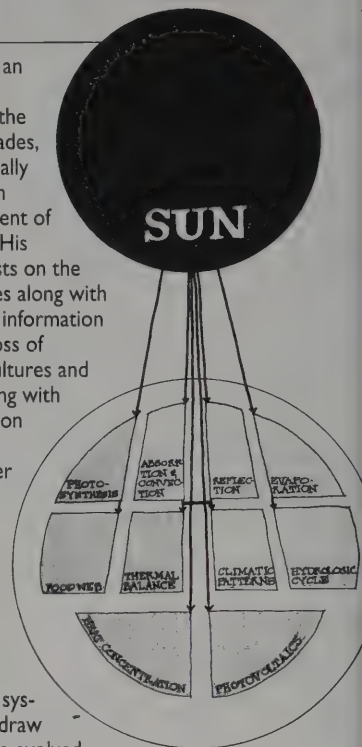
John Tillman Lyle. 1993;
338 pp. ISBN 0-471-55582-7
\$49.95 postpaid from John Wiley & Sons, Inc.,
1 Wiley Dr., Somerset, NJ 08875; 800/225-5945

- The Gaia Institute, which has experimented with rooftop gardens in New York City for several years, has developed a system using greenhouse covers and a lightweight soil employing shredded recycled Styrofoam as a filler. The soil weight is 10 to 20 percent that of natural soils. Institute researchers believe that if this system is used with no space devoted to circulation, the net yield could be 40 to 70 pounds of produce per square foot per year. At this rate, each square foot could provide 30 to 50 percent of the vegetables consumed by an average person. This is 30 to 50 times the yield of field crops. While these figures may be optimistic, the potentials of rooftop agriculture are obviously considerable.

- Neighbors often protest the dramatically visible clusters of wind generators that adorn several mountain ridges in California. In Holland, however, where windmills have been integral parts of the landscape for centuries, people regard them as features of the cultural heritage.

- Wes Jackson has argued that far from

experiencing an information explosion in the past few decades, we have actually undergone an impoverishment of information. His argument rests on the loss of species along with their genetic information and on the loss of traditional cultures and practices along with the information they have collected over generations. Jackson makes a compelling case and his point is especially relevant to regenerative systems, which draw heavily on the evolved wisdom of numerous cultures and which are enmeshed in complex interactions with many species.



- A great many of the Renaissance churches of the 15th and 16th centuries were built with stones acquired by demolishing Gothic churches of the 11th and 12th centuries.

Earth in Mind

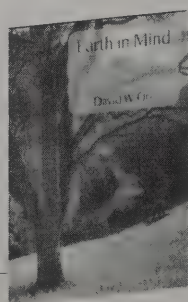
In his 1992 book *Ecological Literacy*, David Orr suggested (insisted, actually) that what currently passes as education leaves us ecologically ignorant and likely to cause environmental problems. I liked it a lot (*WER* 77:20). *Earth in Mind* is a more comprehensive and convincing look at the same issues. Unlike many polemicists, Mr. Orr implements his ideas. He is using his professor's position to (slowly) transform Oberlin College into a model of what a complete educational institution should be. He's also one of the convenors of the Ecological Design Conference (see p. 44). I don't often prescribe a book, but you need to read this one. —J. Baldwin

- More and more colleges and universities are willing to sell off natural areas in their possession and use the proceeds for what administrators regard as more practical purposes. A few have participated in large-scale commercial developments on university-owned lands. Such actions say more than any number of glossy publications or

learned speeches about the real institutional priorities that apparently do not have much to do with trees, forests, and biodiversity. Land holdings, including those in forested land, are appraised mostly for their cash value, not for their value in preserving biodiversity or in educating the young about forests.

Intended or not, decisions to sell off natural lands do have an effect that can be rightly described as educational. Colleges and universities educate by what they do as well as by what they say. Students no doubt will observe that when the going gets a wee bit tough, their intellectual mentors and role models regard natural lands and whatever biological diversity they hold as expendable.

- Third, the modern curriculum teaches little about citizenship and responsibilities and a great deal about individualism and rights. The ecological emergency, however, can be resolved only if enough people come to hold a bigger idea of what it means to be a citizen. This will have to be carefully taught at all levels of education, but a pervasive cynicism about our higher potentials and collective abilities now works against us. Even my most idealistic students often confuse self-interest with selfishness, a view that describes both Mother Teresa and Donald Trump as self-maximizers, each merely doing "her thing" or "his thing." This is not just a social and political problem. The ecological emergency is about the failure to comprehend our citizenship in the biotic community.



Earth in Mind

(On Education, Environment, and the Human Prospect)
David W. Orr. 1994; 224 pp. ISBN 1-55963-295-X
\$16.95 (\$21.20 postpaid) from Island Press, Box 7,
Covelo, CA 95428; 800/828-1302

Ecological Design

What ails the world? According to architect Sim Van der Ryn and mathematician Stuart Cowan, a lot of it is the result of "our failure to see the connections between culture, nature, and the design process" — or what they call "dumb design," which wastes resources, energy, people, and human prospects. The solution to the ecological crisis, accordingly, requires calibrating the way we design with the way nature does it.

Ecological Design aims to foster ecological design intelligence at all levels, "creating revolutionary forms of buildings, landscapes, cities, and technologies." As Van der Ryn and Cowan describe it, ecological design is not simply about making better things. It is the larger and more demanding task of fitting things and processes into larger systems and patterns that harmonize with those of ecosystems. And that requires smartness disciplined by wisdom.

Good design "works best with people committed to a particular place." It requires astute comprehension of natural systems and material flows. And when we get it right, ecological design transforms awareness of our connections



to the world around us and helps us create more sustainable and sustaining communities, economies, and cultures.

Ecological Design is a revolutionary book in the tradition of Siegfried Giedion, Lewis Mumford, and Gregory Bateson. It builds on the work of other visionaries such as Nancy Jack and John Todd, Ian McHarg, David Wann, Bill McDonough, and Victor Papanek. It is not a book about things, but rather one about systems, patterns, context, integration, and ultimately about vision, which is where good design begins. To say that **Ecological Design** deserves a large readership in the late years of the twentieth century is a bit like saying that folks on the Titanic needed lifeboats.

—David Orr

Ecological Design

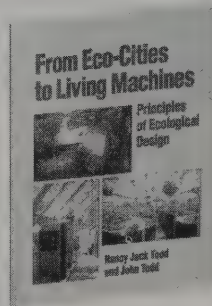
Sim Van der Ryn & Stuart Cowan. Publication expected in the Summer of 1995. \$19.95 (\$24.20 postpaid) from Island Press, Box 7, Covelo, CA 95428; 800/828-1302

The oak chair I am sitting in has a history of its own. It was made from oak harvested hundreds of miles away. The oak was harvested in a logging operation that entailed a network of fellers, roads and trucks. From there, the oak was milled and sent to a factory for assembly into a chair. At the factory, resins, adhesives and varnishes were applied as the chair took form. Finally, the chair was packaged, shipped, warehoused, shipped, retailed, and brought home. In several decades, it will probably grow quite rickety, at which time its owner can repair it, junk it, or salvage it in some way. In a deep sense, the chair embodies the land, water, labor, tools, energy and materials used in its production and distribution. As we understand the stream of processes required to manufacture the chair, we grow closer to assessing its ecological impact.

From Eco-Cities to Living Machines

When this book appeared in its original incarnation in 1984, it was the first to present basic rules of ecological design made credible by scientifically proven working examples. Ten years later, what has been done with those concepts? In this new edition, Nancy Jack Todd and John Todd provide a version of the original ideas that has been sharpened by experience, followed by some interesting spawn. Here are visions of Eco-Cities together with the essential tools needed to make them real. Most enlightening is a detailed account of what John Todd calls Living Machines — carefully designed arrangements of organisms that purify polluted water more effectively than traditional sewage treatment plants can accomplish with hardware and chemicals. All this stuff has been developed through "we must" and "we can" to "we've done it." The book is inspiration to do it large. —J. Baldwin

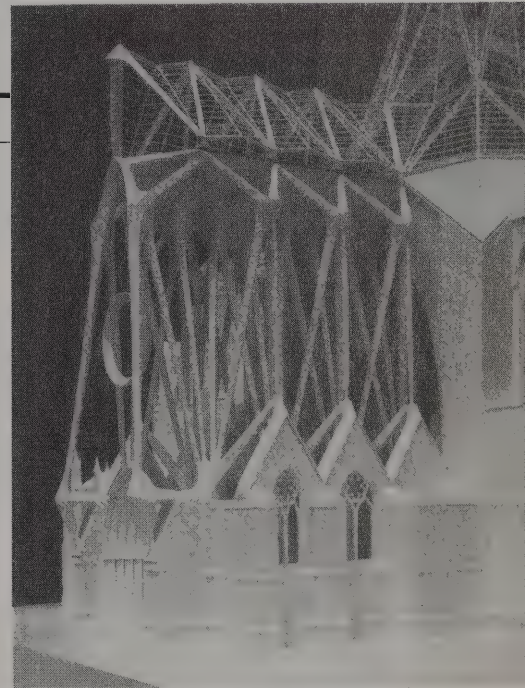
The Cathedral bioshelter design expresses a reemerging relationship between Christianity and ecology. Overlooking the whole city of New York will be a vast bioshelter in the form of a cross. The attic-roof above



From Eco-Cities to Living Machines

(Principles of Ecological Design)
Nancy Jack Todd & John Todd. 1994; 185 pp. ISBN 1-55643-150-3
\$16.95 (\$19.45 postpaid) from North Atlantic Books, PO Box 12327, Berkeley, CA 94712; 510/559-8277

the liturgical space will be transformed into a solar ecology that, one day, may be used to teach Earth stewardship and to green the city with trees, shrubs, flowers, foods, and plants that have the capacity to heat, cool, and purify the city's air. The bioshelter could become the epicenter for the reintegration of diverse forms of life into the fabric of society. As the stones are



Model by Santiago Calatrava of proposed design for Cathedral Bioshelter.

being cut for these towers, under construction again after a fifty-year lull, St. John the Divine grows daily closer to its own ideal of a cathedral. It will be a statement in stone embracing past and future, serving the people of the Diocese of New York and of the world.



Photograph by
Robert Dawson

FUEL FROM WATER



I believe that water
will one day be
employed as a fuel,
that hydrogen and
oxygen which
constitute it, used
singly or together,
will furnish an inex-
haustible source of
heat and light.

—Jules Verne,
Mysterious Island, 1874



BY TY CASHMAN

This article arises from the author's desire to give eyes and conscience to the energy industry.

Ty Cashman's discipline is the philosophy of science; his devotion is to renewable energy, present and future. Twenty years ago he could be found at the top of a windmill at New Alchemy. As California

governor Jerry Brown's coordinator for wind energy, he helped to effect legislation that transformed the global wind industry.

A former president of the American Wind Energy Association and currently the director of the Solar Economy Institute, Ty is writing a book on the philosophy of natural systems. —RK

A LOT OF YOUNG PEOPLE ARE CYNICAL. They've grown up hearing that the world is going to hell. They've seen us environmentalists fighting to save the rainforests and clean up the air, to prevent toxic-waste dumps, prevent massive oil spills, prevent species extinction; and they can see we haven't been very successful. And they know it is they, not us, who are going to have to live and raise their families in the degraded and impoverished world that is being created.

If I had grown up under Nixon and Reagan and Bush, and was smart enough to see how badly my elders are losing the battle for the environment, I'd be cynical, too. But I was born under Roosevelt and was old enough to vote for Jack Kennedy in 1960. Kids in my generation grew up with the confidence that we could stop a Hitler, rebuild a shattered economy, go to the moon and support the poor and oppressed, in our own country and abroad. We just assumed you could change the world.

So, using the opportunity of the 1974 OPEC oil embargo, a number of us began developing prototype wind turbine generators and solar energy systems. Later, some of us joined the Brown administration in California to create a muscular (solar and wind-energy) industry from a handful of spindly prototypes. We accomplished that. So: I am not cynical. I know that something can be done. *You only have to be ready to take advantage of real opportunities as they arise.*

An opportunity is arising right now to solve one of the biggest problems the world faces today. Let's back up a minute and review a couple of facts. It is estimated that 80 percent of the world's environmental pollution comes from the use of fossil fuels: acid rain, oil spills, soil contamination, urban air pollution, etc. It is also known that the increase in atmospheric CO² that will occur in the next decades as billions of tons of fossil fuels are burned is likely to overheat the Earth. The chaotic climate that results will, almost certainly, seriously reduce the amount of food the world's agricultural lands can produce, just as the world population is doubling in size.

Anybody born in the twentieth century has a hard time imagining life without the three fossil fuels: coal, oil and natural gas. Twenty years ago, America (along with Europe and Japan) experienced mortal panic. That was the year when the Organization of Petroleum Exporting Countries reduced the flow of oil to the industrialized nations in order to push the price up. Most people felt that the loss of oil would mean the collapse of civilization.

The huge opportunity I see is that the Age of Fossil Fuels, like the Age of the Dinosaurs, can soon come to

an end. There are even signs (some not yet entirely visible to the naked eye) that it *is* coming to an end. Now, finally, the energy technologies and the fuel that will replace fossil fuels are ready. Energy experts estimate that we could replace virtually all fossil fuels (and nuclear fuels) in a matter of three to four decades with these technologies. And civilization would only be improved.

The fuel of the future is hydrogen, made from water. Hydrogen is the H² in H₂O. No other ingredients are needed. From only two gallons of water you can produce enough hydrogen to drive your car as fast and far as you now drive it on one gallon of Saudi gasoline. You can even produce the hydrogen yourself if you have the equipment.

Hydrogen will cook your lasagna like natural gas. It explodes nicely in the cylinders of a car engine like gasoline. It can fuel the jet engines of an airliner. And its combustion produces *no* carbon dioxide emissions. When hydrogen is burned properly, the tailpipe or smokestack emits nothing but potable distilled water in vapor form.

When hydrogen fuel first comes into use, it will be in cars like the Mercedes Benz and BMW prototypes that burn hydrogen in their cylinders instead of gasoline. These cars give off small amounts of nitrogen oxide pollution in addition to water vapor. Cars that are on the road today can be readily converted to this kind of hydrogen combustion. But soon, new cars will be built powered by fuel cells. A fuel cell is a battery that can use a small, steady flow of hydrogen to produce electricity directly, without combustion. It is extremely efficient (nearly 100 percent) in making electricity from hydrogen. Thus the hydrogen car in your future will have an on-board power plant. The wheels will be driven by four electric motors, one mounted inside each wheel. These cars will need no transmission (a saving in weight) and they will be quiet. Their only emission will be distilled water. The fuel tank in a hydrogen car will have to be much larger and heavier than a gasoline tank, but hydrogen tanks will still be smaller and lighter than the batteries that power electric cars now. A hydrogen tank can be refilled in three minutes, while batteries take several hours to recharge. The hydrogen-electric car has the range and power of a gasoline car, but it will be much cleaner, quieter, simpler, and easier to maintain.

WHILE HYDROGEN requires energy for its liberation from water, it returns that energy during combustion: hydrogen fuel returns to water. It is only a fuel during the part of the cycle when it is in the form of pure hydrogen gas. Jules Verne knew a hundred and twenty years ago that we could use hydrogen as

a fuel. But until quite recently, there was no cheap and equally clean source of energy to produce hydrogen fuel.

Solar and wind energy conversion systems, biomass and geothermal technologies have been improving in reliability and dropping in cost since the oil shocks of the seventies. Renewables solve the key hydrogen fuel problem, and hydrogen fuel solves the key problems of solar and wind energy — they cannot be relied upon for steady power, and not all the electricity they produce can be stored economically. Also, electricity is not flexible enough for all energy uses: some technologies (like airplanes) require fluid fuel.

By sending solar or wind-produced electricity through water, a method called electrolysis, the energy equivalent of a gallon of gasoline can be released from two gallons of water. This hydrogen fuel can be stored, sent long distances through pipes, used in industrial processes and transportation — and burned to generate electricity at solar or wind power plants when the sun doesn't shine or the wind doesn't blow.

MANY WHO KNOW hydrogen's usefulness as a fuel believe that it is more dangerous than, for example, natural gas or gasoline in a fire or an explosion. Hydrogen is odorless and burns with a hot flame that is nearly invisible in daylight. It is difficult to detect and to extinguish. To increase visibility, a colorant would be added, and also an odorant such is added to natural gas. In fact, hydrogen fires radiate less heat and last a shorter time than comparable gasoline fires. Hydrogen gas is extremely light: it dissipates immediately. An explosion of hydrogen usually produces more damage than gasoline or natural gas in an enclosed space, but less in an open space. Hydrogen has great flexibility in ways to store it. Where hydrogen is handled by equipment in oil refineries at high operating temperatures and pressures, it can diffuse into metals, making them brittle. At the lower temperatures found in hydrogen energy systems, this should not be a problem. On average, hydrogen is about as dangerous as gasoline and natural gas. We have learned to respect these fuels, but we do not live in fear of them.

Because the world energy infrastructure is designed for the use of fossil or nuclear fuels at every level, the transition to solar hydrogen will cost money. But the cost need not be great. Electric power plants last only forty years on average; in the industrial world, many power plants will soon be ready for retirement. As each coal- or oil-fired plant is retired, it can be replaced with a solar or wind hydrogen system. The same is true for today's cars — their engines can be converted to burn hydrogen fuel. When these wear out, they can be replaced with fuel-cell cars, if fuel-cell manufacturing has become low enough in price by that time. The transition will occur gradually, over about forty years.

Developing countries that have not yet fully built their energy infrastructure can simply bypass the fossil-power plants and go directly to solar and wind, plus hydrogen. With these new technologies, the southern nations can very soon become solar-rich countries instead of oil-poor countries, and their treasuries will no longer be drained to pay for foreign oil.

It is predicted that eventually the cost of hydrogen production and distribution will be equal to or slightly less than the present cost of production and distribution of fossil fuels, even when the costs of environmental and health damage are not factored in. This price advantage will be too small to bring about a transition due to market forces alone, but two factors on the horizon could start the shift to solar-hydrogen economies. The largest reserves of oil are in the Middle East, and that region appears to be shift-

BOOKS

Hydrogen: The Invisible Fire

Patrick Kiernan. 1991; 50 pp.
\$15 postpaid from IRT Environment,
PO Box 10990, Aspen, CO 81612;
303/927-3155, fax 303/927-9428

This graceful fifty-page pamphlet clarifies the issues of sources, uses, storage, transportation and distribution of hydrogen fuel for the layperson, and lists ten organizations that study or publish information on hydrogen fuel. It's the best brief introduction to the future energy economy I've seen.

Solar Hydrogen

(Moving Beyond Fossil Fuels)
Joan M. Ogden & Robert H. Williams.
World Resources Institute, 1989; 123 pp.
ISBN 0-915825-38-4
\$10 (\$13 postpaid) from WRI Publications,
PO Box 4852, Hampden Station, Baltimore,
MD 21211; 800/822-0504.

This is the classic text for understanding

how the solar-hydrogen economy will work. Ogden and Williams are Princeton physicists whose analysis is based not on the cheapest solar technology but on the most expensive — photovoltaic cells. They show that solar hydrogen is economically feasible even with photovoltaics. How much more so with the much cheaper wind and solar-thermal electric power sources!

Fuel from Water

(Energy Independence with Hydrogen)
Michael Peavey. Merit Products, Inc., 1993;
251 pp. ISBN 0-945516-04-5, Item #80-210
\$16 (\$20.95 postpaid) from Real Goods
Trading Corp., 966 Mazzoni Street, Ukiah,
CA 95482; 800/762-7325.

The book for techies. It goes into detail with diagrams, tables, engineering specs and drawings, but it's quite readable even for non-engineers. If you want to understand what's possible, this one is worth spending time with.

ing toward more radical, fundamentalist politics. The second factor is the scientific news on global climate change that will be released in stages over the next few years.

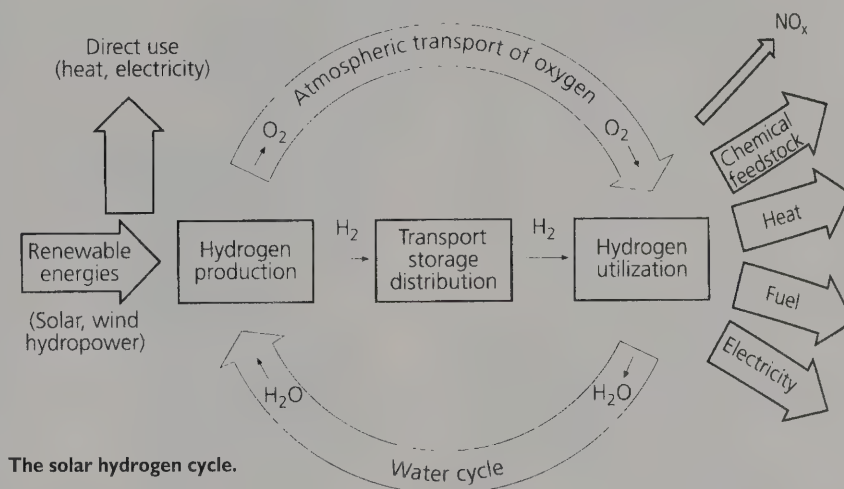
It doesn't make sense for America to have its jugular vein running through the Middle East. We are now more dependent, not less, on Middle East oil than we were at the time of the OPEC oil embargo. Political factions on the rise in that region are more hostile to America and the West than were many regimes in 1974. Department of Energy studies indicate that our own sunlight and wind can produce several times the energy that the Middle East sells us in barrels of oil, without invading any wildlife preserves or ecologically delimited areas. Most solar energy could be gathered on lands set aside for military use.

A change makes sense for national security reasons and for economic reasons. We could reverse our balance-of-payments deficit in a single stroke by using our inexhaustible domestic energy resources instead of foreign oil.

The jury is still out as to the effects of CO² emissions on global climate change. All the fossil fuel users of the world have been alerted. Next year \$2 billion is budgeted for climate change research by the US; other countries are spending billions more, in one of the largest cooperative scientific research ventures ever mounted. As the data comes in and is analyzed, the doubts will shrink. If the news is bad, and as certainty about it grows among thousands of scientists all over the world, citizen pressure on gov-

ernments to limit fossil fuel emissions will also grow. Governments will trigger the change, then it will roll by itself.

But every day that we wait, the assault on the earth and on future generations continues. The opportunity I speak of is to hasten the process by getting out the good news now, telling the story that the technologies are here and ready to keep the Earth cool, green and graced with millions of species for generations to come. As this first huge barrier to a sane future crumbles, the other environmental problems will get easier to solve. In dealing with the biggest piece, we are on our way to dealing with it all. ☺



The solar hydrogen cycle.

RESOURCES

American Academy of Science

26900 East Pink Hill Road, Independence, MO 64057; 816/229-3800.

American Hydrogen Association

P.O. Box 15075, Phoenix, AZ 85060 or: 219 South Siesta Lane, Suite 101, Tempe, AZ 85281; 602/921-0433, fax 602/967-6601.

Center for Electrochemical Systems and Hydrogen Research

Texas A & M University, Mail Stop 3402 College Station, TX 77843-3577; 409/845-0424.

Citizens for Clean Energy

Attn: Stephen J. Clark, P.O. Box 17147, Boulder, CO 80308; 303/443-6181.

Clean Energy Research Institute

University of Miami, P.O. Box 248294, Coral Gables, FL 33124.

Electric Power Research Institute

Generation and Storage Division, 3412 Hillview Avenue, Palo Alto, CA 94304; 415/855-2000.

Hydrogen Consultants, Incorporated

12420 North Dumont Way, Littleton, CO 80125; 303/791-7972.

Hydrogen Industry Council

(Head Office, Eastern Office)

1801 McGill College Avenue, Suite 920, Montreal, Quebec, Canada H3A 2N4; 514/288-5139, fax 514/843-6079 or: (Western Office) 700 Fourth Avenue S.W., 7th Floor - McFarlane Tower, Calgary, Alberta, Canada T2P 3J4; 403/233-2163, FAX 403/233-2165.

The Hydrogen Letter

(monthly newsletter, \$120/yr; consulting services available), Peter Hoffmann, Ed. 4104 Jefferson St., Hyattsville, MD 20781; 301/779-1561, fax 301/927-6345.

National Hydrogen Association

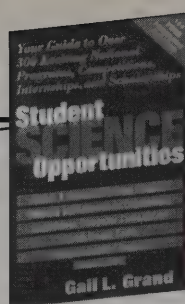
Suite 910, 1101 Connecticut Avenue, N.W., Washington, DC 20036; 202/223-5547, fax 202/223-5537.

Student Science Opportunities

An excellent resource for junior high and high school students, this book describes summer science camps and study programs, research opportunities, academic-year programs, science contests, scholarship programs, resources for women and minorities, and national agencies and programs. The general index is augmented by a regional index by state and a subject index by scientific discipline. —Mollie Rights

Student Science Opportunities

(Your Guide to over 300 Exciting National Programs, Competitions, Internships, and Scholarships)
Gail L. Grand. 1994; 292 pp. ISBN 0-471-31088-3
\$14.95 postpaid from John Wiley & Sons, Inc., 1 Wiley Dr., Somerset, NJ 08875; 800/225-5945



❖ Circumnavigation

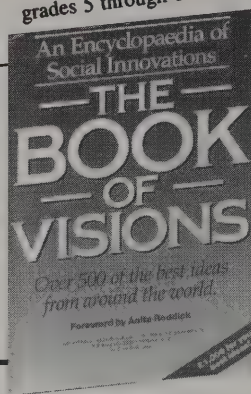
Camper Level: High school and college
Type: Science camp
Location: New Haven, CT
Duration: Five days
Dates: End of June to beginning of July
Housing: Campers are housed aboard ship.
Costs: \$425 for Schooner members; \$475 for nonmembers
Contact: Pamela Wuerth
Circumnavigation
Schooner, Inc.
60 South Water Street
New Haven, CT 06519
(203) 865-1737

During this unusual program, participants live and work as both crew and marine biologists aboard the 91-foot gaff-rigged schooner *Quinnipiac*. The students stand watch; share deck, navigation, and galley duties; and collect and record scientific data as the schooner sails to various ports of call, including Mystic, CT, and Port Jefferson, NY. A day-camp program, entitled "Seafaring Scientists," is also available for students entering grades 5 through 8.

The Book of Visions

Access to jewels! Innovative means to great ends, brought to you by the Society for Social Inventions. —Roger Knights

• *Negotiating the difference for charity*
I asked \$140,000. My client offered \$120,000. After a certain amount of toing and froing we were at an impasse. . . . Suddenly I had a brainwave: why not ask if he would be willing to give the \$20,000 difference away if I accepted his offer. . . . My client quickly accepted and in fact generously offered to give away \$25,000 instead.



The Book of Visions

(An Encyclopedia of Social Innovations)
Institute for Social Inventions.
Virgin Books, 1992; 336 pp.
ISBN 0-86369-601-5, Order # 99109
\$29 (\$33 postpaid) from Loompanics Unlimited, PO Box 1197, Port Townsend, WA 98368; 206/385-5087

• The Doctors by Phone service in New York offers medical advice for \$3 a minute. It is staffed by 80 physicians, who are paid £40 an hour to advise callers on everything from Lyme disease to chapped lips. Most callers are not experiencing medical emergencies but want general information.

• *Schizophrenic helped by 'flow' happiness theory*
Mihaly Csikszentmihalyi, a professor of psychology at the University of Chicago, believes that he has identified the source of human happiness. It comes from what he calls 'flow', a state of deep concentration . . . that occurs whenever individuals set themselves a goal and seek to overcome the obstacles in their way to enjoying it. People typically then report feeling strong, alert, in effortless control and at the peak of their abilities. Emotional problems and the sense of time seem to disappear.

Csikszentmihalyi cites the case of a female schizophrenic in Holland who had failed to respond to conventional psychiatric treatment. Using an electronic beeper, psychiatrists interrupted her at different points in the day and asked her how she felt. After doing this a number of times, they discovered that she was invariably happiest when cutting her nails. Concluding that this was for her an optimal experience, they found her a job as a manicurist and successfully returned her to the community.

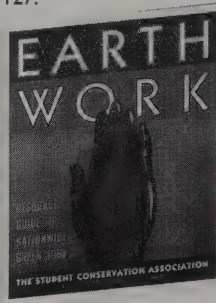
Earth Work

The question I am most often asked by our readers is "Where can I get a green job?" (Like us, most of the questioners are hip enough to avoid the overworked word green.) I usually tell them to hang out where interesting work is being done — perhaps as a volunteer — and be ready to pounce. Now I'll just aim 'em at this book, which tells where the paying jobs are and how to get them. (Keep in mind that volunteering is still a good way to get your nose in the tent.) It's the most useful resource I've seen. It'll save you a lot of time, and me a lot of blabbing. —J. Baldwin

• Although rangers are the most familiar, the NPS workforce is quite varied. Jobs available in the Service include positions in the U.S. Park Police, administrative careers, maintenance and trade positions, land acquisition and concession specialists, and some positions in the biological sciences. Persons with backgrounds in archaeology and history and, to a lesser degree, sociology, geography, and anthropology, conduct cultural resource programs. Museum jobs, though few in number, are particularly ex-

citing because of the varied collections of the NPS.

For a twenty-page booklet on NPS careers, "U.S. Department of the Interior National Park Service Careers," write National Park Service, P.O. Box 37127, Washington, DC 20013-7127.

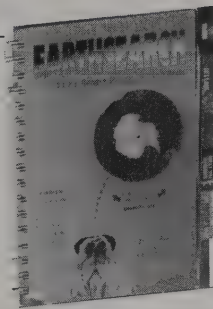


Earth Work

(Resource Guide to Nationwide Green Jobs)
The Student Conservation Association,
Richard Wizansky & Joan Moody, Editors.
HarperCollins West, 1994; 205 pp.
ISBN 0-06-258531-2
\$14 (\$16.75 postpaid) from HarperCollins Publishers, Direct Mail, PO Box 588, Dunmore, PA 18512; 800/331-3761

Earthsearch

This amazing and unusual book is a "kids' geography museum." Its cover is recycled aluminum; its contents include (among other things) a population clock, mazes, puzzles, dials, and rice (to show the inadequate diet of much of the world). You can match coins to their countries, slice an apple into parts of the world, send a teddy bear on a journey and get back postcards from exotic places, and a log of the trip when the bear comes back. —Mollie Rights



Earthsearch

(A Kids' Geography Museum in a Book)

John Cassidy. 1994; 110 pp.
ISBN 1-878257-74-9

\$19.95 (\$23.45 postpaid) from
Klutz Press, 2121 Staunton
Court, Palo Alto, CA 94306;
415/857-0888

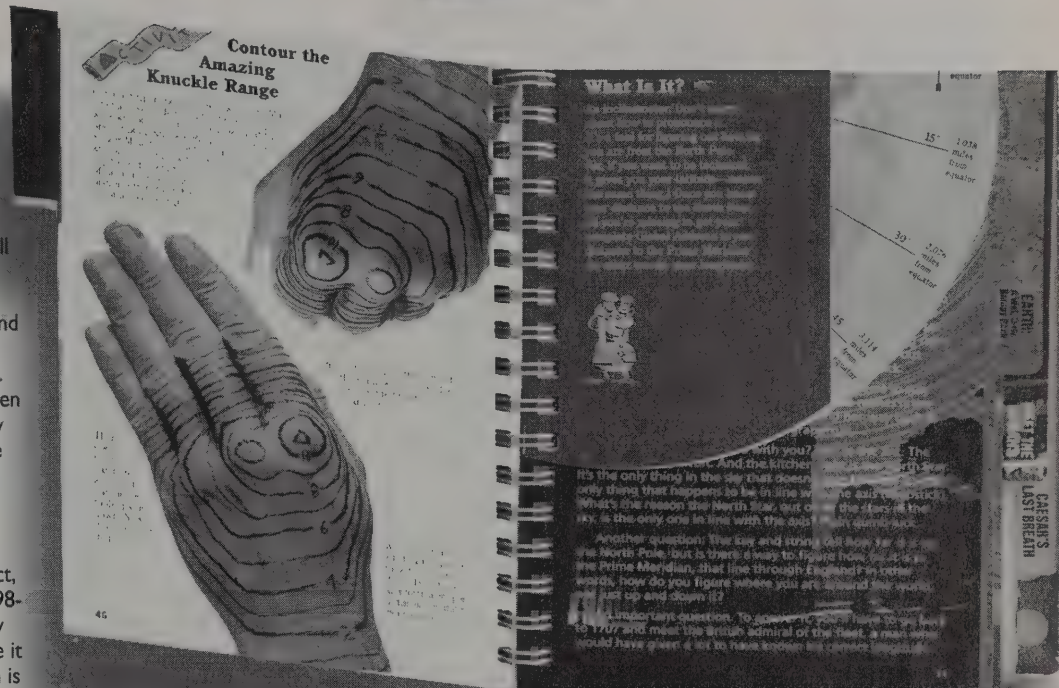
• Meanwhile, consider the air you're breathing. Take a deep breath and hold it while you read the following paragraph:

Fact: Virtually all the oxygen in your lungs right now is millions of years old. In millions of years, a lot can happen. We'll start with the obvious. You are not the first to use this oxygen. Countless animals and people have shared it with you. Dinosaurs, for example. Some of the very same oxygen molecules that are right now in your lungs and blood have spent time in dinosaur lungs.

• Our Whole Point

When we started this project, we drew up a complicated, 98-page, multi-media plan to say one single simple thing. Here it is, our Big Lesson: The earth is an amazing rock flying through space, filled with more amazingness than we or anyone could ever possibly get their fill of.

That's our lesson. Doing this book opened our eyes a little wider to it, and we hope it opens yours a little bit the same way.

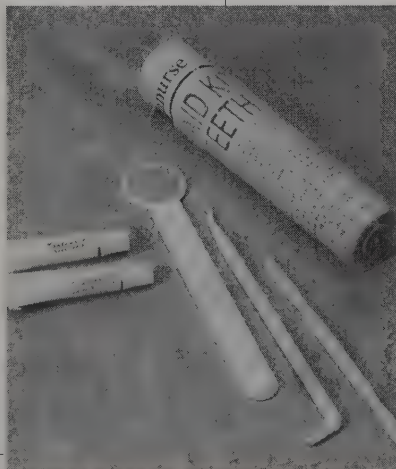


Dental First Aid Kit

Dental disaster is second only to intestinal rebellion as the most likely cause of an uncomfortable or even ruined excursion. The contents of this packet can remedy lost fillings; loose crowns, caps and inlays; and toothache. In China, we saw sidewalk dentists with pedal-powered drills and no sanitation. Yes indeed. —J. Baldwin

Dentanurse® Dental First Aid Kit

Majestic Drug Co., Magellan's catalog item #KR525
\$19.85 (\$24.80 postpaid) from
Magellan's, Box 5485, Santa
Barbara, CA 93150-5485;
phone 800/962-4943,
fax 805/568-5406



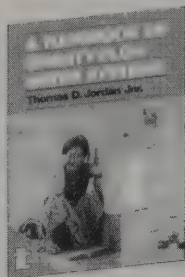
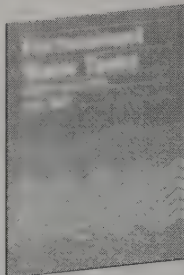
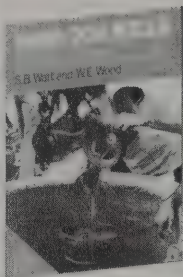
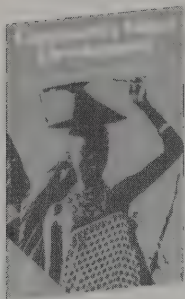
Fun WATER Fact

If all the rain on Earth was shed evenly in space and time, a little less than one-tenth of an inch would fall everywhere each day.

The Intermediate Technology Development Group

The legacy of E. F. Schumacher, English author of *Small Is Beautiful*, and his cronies, ITDG carries out international research on small, locally controlled technologies. They produce useful and practical publications, many of them the unique source of information on a given topic. ITDG's quarterly magazine, *Waterlines*, is devoted solely to low-cost water and sanitation. The organization's other titles include *Community Water Development*; *Ferrocement Water Tanks and Their Construction*; *Hand Dug Wells and Their Construction*; and *A Handbook of Gravity-Flow Water Systems*.

—Karen Van Epen



Waterlines

(Appropriate Technologies for Water Supply and Sanitation)

\$28/year (4 issues) from Intermediate Technology Publications, 103-105 Southampton Row, London WC1B 4HH, UK; 44 (0) 71 436-9761, fax 44 (0) 71 436-2031. Free ITDG catalog with complete list of titles from Women, Ink, 777 United Nations Plaza, New York, NY 10017; 212/687-8633, fax 212/661-2704

The Next Efficiency Revolution

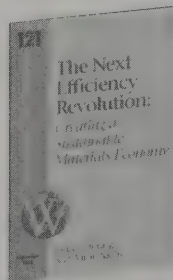
The need for energy efficiency has been recognized; we're working on it. Materials efficiency is next, just as Buckminster Fuller insisted with his doctrine of "ephemeralization" — doing more with less — sixty-five years ago. Studies show that obtaining the raw materials used by industry is much more environmentally and socially destructive than pollution and waste disposal. The remedy calls for using less stuff in the first place, disciplined worldwide recycling of everything recyclable, and designing resource-efficient products for longevity and remanufacturability. Also implied is a need to discourage the very making of fripporous items. Sooner or later, this will have to happen. This little book provides a neat introduction to the issues and

principles, and shows the enormous amount of work that has yet to be done. —J. Baldwin

- There are, for example, 17 sets of specifications governing the use of concrete in the United States, according to the Construction Specifications Institute — but none of them include any environmental information. Developed by a host of government agencies, private firms, and professional societies, such specifications are what guide designers in choosing materials. But they

usually address only such qualities as weight, strength, durability, safety, appearance, and shelf life. Sometimes the specifications even work against sustainable design, as when virgin materials are specified for work that could have been done with used materials.

- In reality, problems with markets for secondary materials are largely a symptom of the promotion of recycling only as a waste-management option rather than as part of a broader materials policy.



The Next Efficiency Revolution (Creating a Sustainable Materials Economy)

John E. Young & Aaron Sachs. Worldwatch Paper #121, 1994; 58 pp.
ISBN 1-878071-22-X

\$5 (\$8 postpaid) from Worldwatch Institute, 1776 Massachusetts Avenue, NW, Washington, DC 20036-1904

Rocky Mountain Institute: Waterworks

The esteemed Rocky Mountain Institute is best known for energy-conservation strategies — the concept of "Negawatts" being the most famous. Negawatts constitute electricity made available by increased conservation and efficiency rather than increased generating. But RMI applies their skill to all resources, including water. Do they perchance champion "Negagallons"? Yes indeed, complete with suggested strategies, tactics, hardware, and management techniques, ranging in scale from personal habit changes to municipal policy. Contact RMI for a list of their offerings.

Water Efficiency for Your Home will help you begin to implement your responsibility as a water user. RMI's more comprehensive water publications are listed in back, each with a brief description. They reveal brand names, test results, and proven strategies for setting

water policy at local and regional levels. "Negagallons!"

For larger projects, consider RMI's Green Development Services. They "work with architects, builders, developers and property managers to encourage cost-effective state-of-the-art construction that saves energy, materials and water, produces comfortable and healthful interior spaces, preserves habitats and cultural resources, reduces traffic and limits harmful and thoughtless sprawl." This sort of comprehensive approach to design will be repaid in the long run, and those who must use the facility or be affected by it will thank you. —J. Baldwin

Rocky Mountain Institute

Free RMI publications list, Membership \$10/year (includes newsletter) from 1739 Snowmass Creek Road, Snowmass, CO 81654-9199; 303/927-3851, fax 303/927-4178

Western Water Made Simple

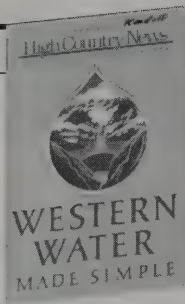
With its oxymoronic title, this book makes clear the complex realities of water in the West. The editors of *High Country News* have assembled reports and essays by more than twenty different authors, covering water politics and economics in three great Western river basins: the Columbia, the Missouri, and the Colorado. *Western Water Made Simple* is great for anyone who wants to truly understand water development and conservation issues, because it tells the local stories. —water@well.com

Without the Colorado River, the Imperial Valley would be a desert. It lies several hundred feet below sea level, has 100 days when the temperature hits at least 100 degrees, has no usable groundwater, and gets 3 inches of rainfall a year. But with its 2.5 million acre-feet of Colorado River water — one-sixth of the river's yearly flow — the Imperial Valley is one of the world's most productive farm areas. —Ed Marston

Examples abound of damage to salmon habitat by roading and logging. An infamous example occurred in Idaho's South Fork of the Salmon River in the Payette National Forest. The forest, made up of steep, highly erosive granitic soils of the Idaho batholith, was heavily roaded and logged from 1950 to 1966. Toward the end of this period, severe storms in 1962, 1964 and 1965 accelerated erosion from the roads, and portions of the South Fork had sediment loads 350 percent higher than the pre-1950 period. The coarse-textured sands buried the newly constructed chinook salmon nests called redds under a blanket of mud, and fish that managed to hatch found the pools that past generations had used for food and shelter filled with sand. —Hadley Roberts

The northern plains is a region where, because so much depends on agricultural productivity, preservation of the landscape, rivers, and wetlands has not come first. Current agricultural practices and the importance of stabilizing the region's farm-based economy puts relentless pressure on resources. —Peter Carrels

Today, the landscape of Washington, Oregon, and Idaho has been thoroughly reworked as a result of hydropower development. Hardly any major stream of the 260,000-square-mile Columbia River watershed has been left unaffected. The unobstructed Columbia of 1805, down which Lewis and Clark drifted with only a single portage at Celilo Falls, is today a staircase series of slackwater reservoirs. —Charles F. Wilkinson and Daniel Keith Conner



Western Water Made Simple

High Country News Staff.
1987; 237 pp.
ISBN 0-933280-39-4
\$15.95 (\$20.20 postpaid)
from Island Press, Box 7,
Covelo, CA 95428;
800/828-1302

Uphill: The natural direction that Western water flows, providing there is money uphill. —Ed Quillen



Water Law in a Nutshell

How works US water law? This book explains legal water with references to cases and historical context, for lawyers, students, experts, gadflies, and the simply puzzled. It's part of West Publishing Company's Nutshell Series, which covers the legalities of everything from soup to spuds. If you're involved with water, you might want to buy this. Filled with "gee-whiz" tidbits for the alegal reader. —water@well.com

It is often said that no one has the right to waste water; yet one's water right and priority are based not on conservative or wise use, but on whether the use is within a state's definition of "beneficial use."

Several states have provided for controlled mining of aquifers so that depletion occurs over a predictable number of years. The term "safe yield" in its strictest sense means a level of withdrawals that does not exceed recharge. The concept has, however been modified so that "safe yield" refers to a level of withdrawals that will allow depletion of an aquifer over a period thought to be socially optimal. The choice of the time period reflects policy judgments.

No Supreme Court decision has questioned the existence of federal power to reserve water from appropriation under

Water Law in a Nutshell

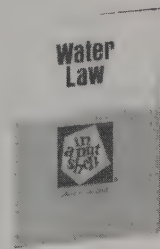
David H. Getches. 1990; 439 pp.
ISBN 0-314-73779-0

\$18.50 postpaid from West Publishing Corp., 620 Opperman Drive, PO Box 64779, Saint Paul, MN 55164-0779; 800/340-9378

state law. Rather, the persistent question has been whether, in the absence of an express reservation, Congress intended to exercise its powers.

Originally, "reclamation" referred to the process of draining swamps and marshes to make them useful for agriculture. The same word was later used for the process of converting desert lands to agriculture, typically by use of irrigation water supplied by a federal project.

A state may sue in its role of *parens patriae* to prevent harm to its citizens by actions of private parties in another state.



THE CITY OF FIRST

BY DONELLA MEADOWS

RESIDENTS OF CURITIBA, BRAZIL, think they live in the best city in the world, and a lot of outsiders agree. Curitiba has seventeen new parks, ninety miles of bike paths, trees everywhere, and traffic and garbage systems that officials from other cities come to study. Curitiba's mayor for twelve years, Jaime Lerner, has a 92 percent approval rating. There is nothing special about Curitiba's history, location or population. Like all Latin American cities, the city has grown enormously — from 150,000 people in the 1950s to 1.6 million now. It has its share of squatter settlements, where fewer than half the people are literate. Curitiba's secret, insofar as it has one, seems to be a simple willingness of the people at the top to get their kicks from solving problems.

Those people at the top started in the 1960s with a group of young architects who were not impressed by the urban fashion of borrowing money for big highways, massive buildings, shopping malls and other showy projects. They were thinking about the environment and about human needs. They approached Curitiba's mayor, pointed to the rapid growth of the city, and made a case for better planning. The mayor sponsored a contest for a Curitiba master plan. He circulated the best entries, debated them with the citizens, and then turned the people's comments over to the upstart architects, asking them to develop and implement a final plan.

Jaime Lerner was one of the architects. In 1971 he was appointed mayor by the then military government of Brazil. He has since served two more four-year terms (nonconsecutive, as required by Brazilian law) — one of them appointed, the other elected.

Given Brazil's economic situation, Lerner had to think small, cheap, and participatory — which was how he was thinking anyway. He provided 1.5 million tree seedlings to neighborhoods for them to plant and care for. ("There is little in the architecture of a city that is more beautifully designed than a tree," says Lerner.) He solved the city's flood problems by diverting water from lowlands into lakes in the new parks. He hired teenagers to keep the parks clean.

Lerner prefers rehabilitating built-up areas to spreading the city outward. He converted a former warehouse into a theater and an abandoned glue factory into a community center. He met resistance from shopkeepers when he proposed turning the downtown shopping district into a pedestrian zone, so he suggested a thirty-day trial. The zone was so popular that shopkeepers on the other streets asked to be included. Now one pedestrian street, the Rua das Flores, is lined with gardens tended by street children.

Orphaned or abandoned street children are a problem all over Brazil. Lerner got each industry, shop and institution to "adopt" a few children, providing them with a daily meal and a small wage in exchange for simple

maintenance, gardening or office chores. Brazil forbids child labor; Lerner says, "By law, a child mustn't work, but society looks the other way when he goes hungry or homeless or works for a drug trafficker."

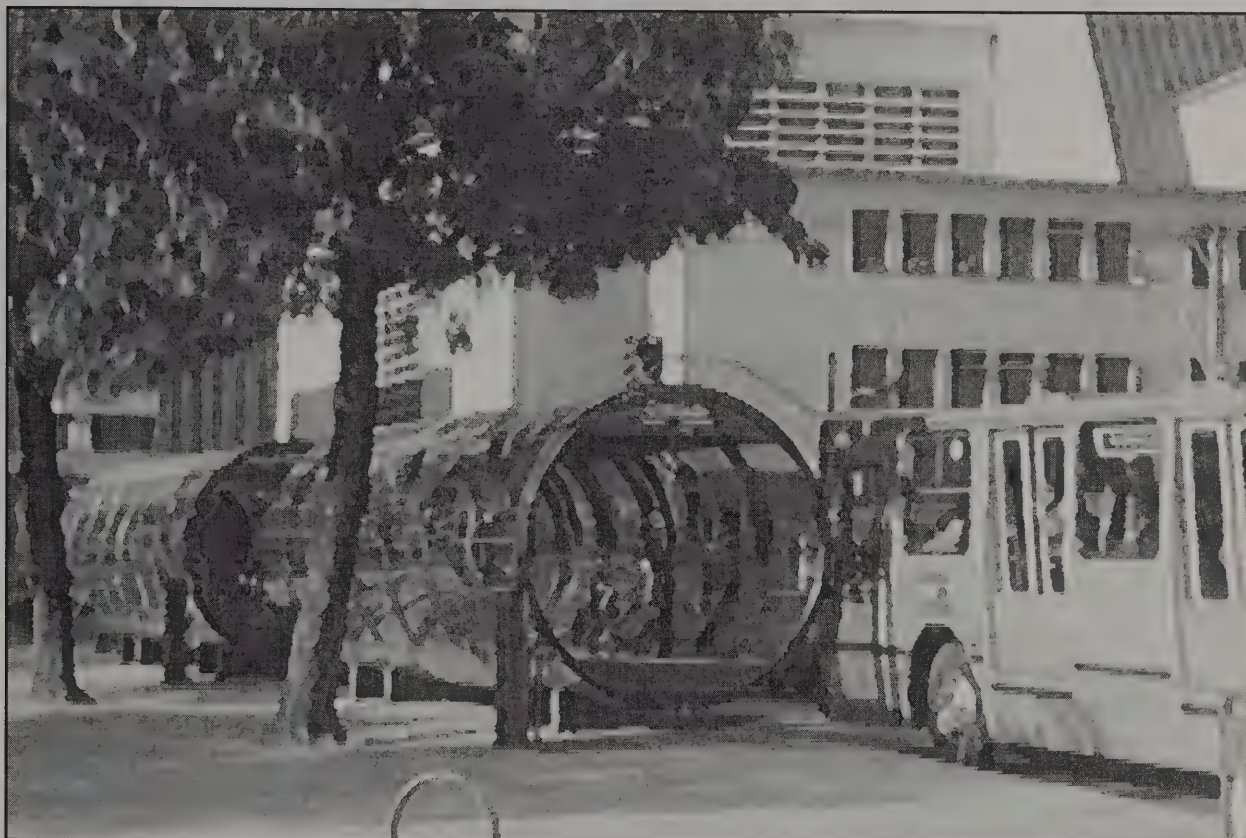
Another Lerner innovation was to organize the street vendors into a mobile, open-air fair that circulates through the city's neighborhoods.

Concentric circles of local bus lines connect to five lines that radiate from the center of the city in a spider web pattern. On the radial lines, triple-compartment buses in their own traffic lanes carry three hundred passengers each. They go as fast as subway cars, but at one-eighth the construction cost.

The buses stop at Plexiglas tube stations designed by Lerner. Passengers pay their fares, enter through one end of the tube, and exit from the other end. This system eliminates paying on board, and allows faster loading and unloading, less idling and air pollution, and a sheltered place for waiting — though the system is so efficient that there isn't much waiting. There isn't much littering either. There isn't time.

Bus fares are low (twenty to forty cents per ride, with unlimited transfers), but the system pays for itself. Private companies own and operate the buses and keep part of each fare. The city gets the rest to pay for roads and terminal and to buy up old buses, which are refurbished as classrooms, daycare centers, and clinics.

PRIORITIES



© Ecological Design Project

Passengers pay their fares, enter through one end of the tube, and exit from the other end. This system eliminates paying on board, and allows faster loading and unloading, less idling and air pollution, and a sheltered place for waiting — though the system is so efficient that there isn't much waiting.

Curitiba's citizens separate their trash into just two categories, organic and inorganic, for pickup by two kinds of trucks. Poor families in squatter settlements that are unreachable by trucks bring their trash bags to neighborhood centers, where they exchange them for bus tickets or for eggs, milk, oranges and potatoes, bought from outlying farms.

The trash goes to a plant (itself built of recycled materials) that employs people to separate bottles from cans from plastic. The workers are handicapped people, recent immigrants, alcoholics.

Recovered materials are sold to local industries. Styrofoam is

shredded to stuff quilts for the poor. The recycling program costs no more than the old landfill, but the city is cleaner, there are more jobs, farmers are supported, and the poor get food and transportation. Curitiba recycles two-thirds of its garbage — one of the highest rates of any city, North or South.

Curitiba builders get a tax break if their projects include green areas. The city has a hotline to report industrial polluters. In spite of strict environmental laws, 341 major industries, including Fiat, Pepsi and Volvo, have plants or offices in Curitiba.

Jaime Lerner says, "The dream of

a better city is always in the heads of its residents. Our city isn't a paradise. It has most of the problems of other cities. But when we provide good buses and school and health clinics, everybody feels respected. The strategic vision leads us to put the first priorities on the child and the environment. For there is no deeper feeling of solidarity than that of dealing with the citizen of tomorrow, the child, and the environment in which that child is going to live." ☺

Donella Meadows is an internationally known sustainability activist. She lives on a farm in New Hampshire and teaches environmental studies at Dartmouth College.

JAIME LERNER: TOWARD A RECHARGEABLE CITY

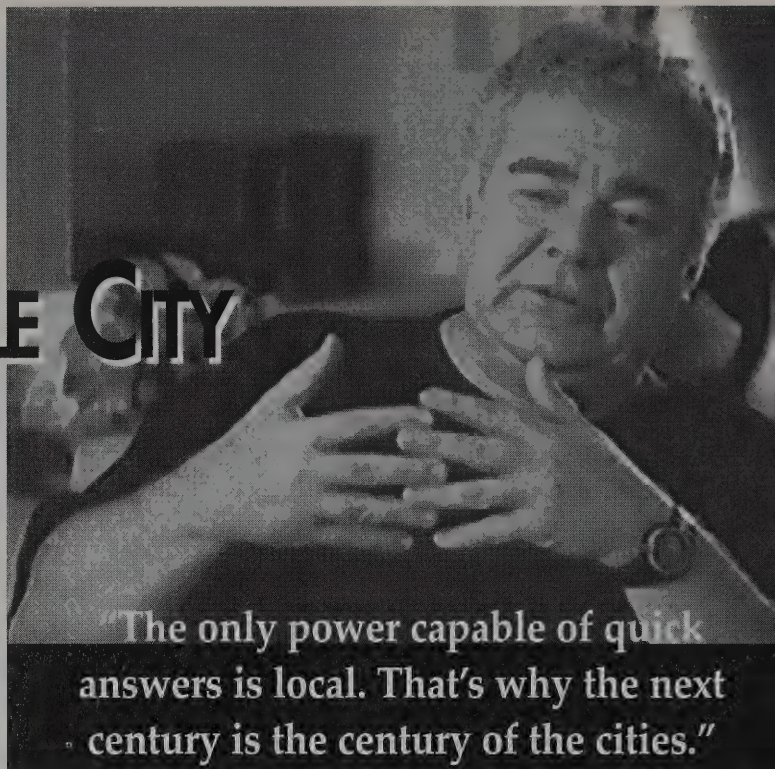
FROM AN INTERVIEW BY CHRIS ZELOV

I WAS A STUDENT OF ARCHITECTURE at the time when the mayor of my city attempted to change the downtown. He thought mostly in terms of building big roads and widening streets; projects that could end up killing the city's history and character. We students opposed these changes, and a big fight ensued to form a dynamic plan for the city — because the usual plan was static: zoning and a hierarchy of roads. We needed another concept of cities.

We have to move from a linear pattern to a circular one: toward a rechargeable city. A city that wastes the minimum and saves the maximum. We cannot assume our resources as being infinite. I think we should have an Eco-Clock that shows the proportion between saving and wasting. In every city we know the time, the temperature, but we don't have a measure of that city's commitment to the environment.

If we want a human city we have to mix all our urban functions. Mixed use, mixed income: the more we mix, the more human is the city. Cities of the third millennium won't be about a Flash Gordon scenario or a *Blade Runner* scenario. The city of the future — the quality city — will be about the reconciliation of people with nature. It will replenish itself, respect its history, its human scale, its part of nature.

You cannot change a country through economic measures. There is no economic change when there's no national will. Our society is used to quick answers: credit cards give us quick money, fax machines give us quick messages, computers give us quick answers — the only thing that is still Stone Age is central government. The only power capable of quick answers is local. That's why the next century is the century of the cities. René Dubois said: Decency is not destiny. The moment when a society detects a bad tendency is the exact moment of the



"The only power capable of quick answers is local. That's why the next century is the century of the cities."

© Ecological Design Project

change. Twenty years ago we were inadequately concerned with the environment. Now it's changing. Why? The society detected it.

The cities can change the energy profile of a country. We will see how far we can go with transport, or saving energy with garbage. For instance, in our country the foreign debt was responsible for the sacrifice of a whole generation, with recession, unemployment, poverty. The major part of this foreign debt is related to big energy projects. This is not a question of scale or specific problems of a city, it's a philosophy. Wasting and wasting again, building more big energy projects? What a spoiled country. We need to use the energy from the sun directly, and get off of our dependence on multinational oil corporations. This is very important for our sovereignty.

Carl Paul Volberger said, on the occasion of the hundredth anniversary of the Brooklyn Bridge: A monument should represent a shared cause that links the different parts of society. Cities should also represent this shared cause. It's the only way that we can achieve a collective dream. There is no endeavor more noble than the attempt to achieve a collective dream. When a city accepts as a mandate its quality of life; when it respects the people who live in it; when it respects the environment; when it prepares for future generations, the people share the responsibility for that mandate, and this shared cause is the only way to achieve that collective dream. ♻️

Sastun

Rosita Arvigo, a young herbologist from Chicago, set up a homestead with her family in the rainforest of Belize, and discovered a local eighty-seven-year-old Mayan healer, Don Eljio Panti, one of the last surviving traditional masters of the rainforest's imperiled natural pharmacy and supernatural healing traditions. An extraordinary relationship developed between Arvigo and the cantankerous, endearing and deeply spiritual old man. This is a wonderful read, as well as a compelling testimony to the depth of knowledge often overlooked by Western medicine, and the enormous importance of preserving these ancient resources. —Carolyn Drewes

See *WER* 75:52 for an interview with Rosita Arvigo. —JD

Panti held the man's right hand, then instructed him to open his palm. There was a small, translucent ball the size of a marble. Panti moved the man's hand back and forth, causing the marble to dance about on the flattened palm. Panti moved his face closer to the object, pushing up the eyeglasses the doctors had given him and looking directly into it before pointing and exclaiming, "Yes. There it is. Do you see that black dot? That is your illness. Envy. Pure envy."



Sastun

Rosita Arvigo & Nadine Epstein.

HarperSanFrancisco, 1994;

190 pp. ISBN 0-06-250259-X

\$11 (\$13.75 postpaid) from HarperCollins

Publishers, Direct Mail, PO Box 588,

Dunmore, PA 18512; 800/331-3761

Aguirre

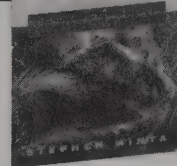
In the mid-sixteenth century, Lope de Aguirre set out from Peru as a soldier on a military expedition to conquer and settle the mythical city of El Dorado. The journey down the Amazon turned into a whirlpool of murder, insanity and intrigue. Convinced that they would not find El Dorado, Aguirre led a mutiny, murdered the commander of the expedition, and eventually declared himself Lope de Adjure, the Wrath of God, Prince of Freedom and of the Kingdom of Tierra Firme and the Provinces of Chile, Lord of all South America. When he died, the Spanish government had his lands destroyed and his name stricken from all public records.

Stephen Minta retraces the path Aguirre took in this wonderfully dark travelogue. He slowly doles out the history of Aguirre's ill-fated journey as he describes a modern South America that becomes a distorted mirror of its past: Peru wracked by years of civil war, empty jungle towns, modern cities, ancient ruins. It's disturbing, hypnotizing look at a small part of the conquest of the Americas and the first break from the Old World. —Wade Fox

And now, suddenly, with that mixture of arrogance and theatricality for which he will become famous, Lope de Aguirre appears, takes the document, and signs: "Lope de Aguirre, traitor."

He showed it to those around him and then began a remarkable speech: "What madness, what foolishness is this that has overcome you all? That having killed the king's governor, one who was clothed with royal powers and who represented his royal person, you should now think of excusing yourselves from guilt? All who have played a part have been traitors. And even if we were now to discover and settle a new land, and even if it were to be better than Peru itself, the first *bachiller* to come along would cut off our heads. Anyone who thinks otherwise has lost all reason . . ."

AGUIRRE



Aguirre

Stephen Minta. 1994;

244 pp. ISBN 0-8050-3103-0

\$20 (\$23 postpaid) from

Henry Holt and Co.,

4375 West 1980 South Street,

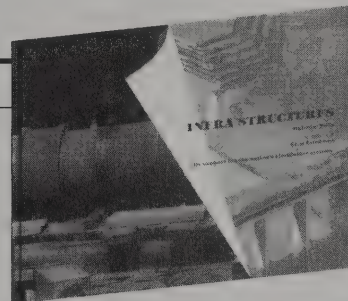
Salt Lake City, UT 84104;

800/488-5233

Infra Structures

Inevitable and apparently eternal potholes have become the symbol of a neglected infrastructure and a lack of competence. "Every public structure in the country seems to have something wrong with it," says architect Malcolm Wells. His answer is to use new designs that will endure and that are more in tune with nature. "Do we want to be in the same mess again thirty or forty years from now when all the replacements start to fail?" he asks. "I began to imagine another world, a world made green again not in spite of the built environment, but because of it. Earth-covered. Alive! Permanent. Beautiful. Part of the show, no longer an outsider." He makes his case by contrasting damning photographs of ugliness with his skillful watercolor paintings of how things might be, including an underground airport! Outrageous. And sensible.

—J. Baldwin



Infra Structures

Malcolm Wells & Rick Friedmann.

1994; 66 pp. ISBN 0-9621878-6-0

\$16 postpaid from Underground Art

Gallery, 673 Satucket Road, Brewster,

MA 02631; 508/896-6850,

fax 508/896-5116

It's hard to imagine part of Newark, New Jersey, or the industrial section of Los Angeles looking clean and alive like this but it will happen. It must . . . The shock-absorbing action of its rubbery stiffness will tend to make this sky tunnel immune to seismic damage.

Night Song of the Los Angeles Basin

Owl
calls.

pollen dust blows
Swirl of light strokes writhing
knot-tying light paths.

calligraphy of cars.

Los Angeles basin and hill slopes
Checked with streetways. Floral loops
Of the freeway express and exchange.

Dragons of light in the dark
sweep going both ways
in the night city belly.
The passage of light end to end and rebound,
—ride drivers all heading somewhere—
etch in their traces to night's eye-mind

calligraphy of cars.

Vole paths. Mouse trails worn in
On meadow grass:
Winding pocket-gopher tunnels.
Marmot lookout rocks.
Houses with green watered gardens
Slip under the ghost of the dry chaparral.

Ghost
shrine to the L.A. River.
The jinja that never was there
is there.
Where the river debouches,
the place of the moment
of trembling and gathering and giving
so that lizards clap hands there
—only lizards
come pray, saying
"please give us health and long life."

a hawk,
a mouse.

Slash of calligraphy of freeways of cars.

Into the pools of the channelized river
the Goddess in tall rain dress
tosses a handful of meal.

Gold bellies roil
mouth-bubbles. Frenzy of feeding.
the common ones, the bright-colored rare ones
show up, they tangle and tumble,
godlings ride by in Rolls Royce
wide-eyed in brokers' halls
lifted in hotels
being presented to, platters
of tidbit and wine,
snatch of fame.

churn and roil.

meal gone the water subsides.

a mouse,
a hawk.

The calligraphy of lights on the night:

freeways of Los Angeles

will long be remembered.

Owl
calls;
late-rising moon.

—Gary Snyder

From
"Mountains
and Rivers
Without End,"
Published in
Ten Direc-
tions, Zen
Center of
Los Angeles,
Spring 1986.



The Los Angeles river, confined to a concrete channel in downtown LA, is agitated by a small storm.



MY name is Lewis MacAdams and I am a poet. In 1985, Pat Patterson, sculptor and architect, Roger Wong, who owned a gallery called the Los Angeles Museum of Art, and I rendezvoused with architect Fred Fisher for a cup of coffee at the old Challenge Dairy Building on Vignes Street, which Fred was then converting into condos. After taking each other's picture, we used a pair of wirecutters to slice through the L.A. County Dept. of Public Works' fence, then we clambered down the concrete walls into the concrete channel of the Los Angeles River. We felt like we were exploring the moon.

We didn't know where we were going, but instinctively we walked upstream. (I use the

Restoring the Los Angeles River:

A Forty-Year Art Project

BY LEWIS MACADAMS

PHOTOGRAPHS BY JIM DANZA

Lewis MacAdams is an award-winning poet and filmmaker. He's a CQ/WER contributor from way back, and has recently written an article for Rolling Stone about toxic-waste dumping on Indian reservations. Lewis lives in Los Angeles. —Hacsi Horvath

In any Southwestern riverine ecology,
the sycamore is the climax vegetation, the leafy
aristocrat that waits for everything else to be in place
and in good health before it returns.

term "stream" here loosely. This was before the Tillman Water Reclamation Plant came on line, and reclaimed water began flowing, and the pieces of the river that hadn't been paved over started regenerating.) Roger, Pat, and I came to the confluence of the Los Angeles and Arroyo Seco, a few feet upstream from where we're standing this morning. The air around us was in an unholy din. A Southern Pacific freight train rumbled up the tracks on one bank. A Santa Fe freight rumbled down the tracks on the other. Traffic on two freeway bridges and the Riverside Drive bridge roared by. The odor was industrial. The scene was latter-day urban hell.

Because — as Gary Snyder once observed — concrete is just inverted riverbed, eventually the river will reclaim itself. When that happens, the concrete riverbottom has to be re-paved. That day a dozen guys in sleeveless t-shirts were jackhammering the pavement in front of airport runway paving machines. I noticed that many of their heavily muscled arms were mottled with festering sores where untreated nicks and scratches had come into inadvertent contact with the algaed water that flowed down the channeled river's cement invert.

We knew that this must have once been a beautiful spot, a year-round stream in a climate that only receives about ten inches of rain a year. I envisioned it a sylvan glen, a thicket, an avalon, a marsh, a place of great blue herons, where a kingfisher darting at a steelhead's flash might accidentally flush a doe. Today the culvert that links the arroyo with the river is jammed with junk, with so much household garbage it's practically a flood hazard. People were sleeping in derelict cars. Luckily, it was too noisy to hear ourselves think, so when we asked the river if we could speak for it in the human realm we didn't hear it say no; and that was how Friends of the Los Angeles River began.

But that was only the first part of the original Friends of the Los Angeles River performance. The second part took place onstage at the Wallenboyd Theatre (which was once at the corner of Wall and Boyd Streets) in downtown Los Angeles that night. As part of *Angel's Flight*, a series of performance pieces Julie Lazar produced for the Museum of Contemporary Art, Pat Patterson built a fifteen-foot-high Los Angeles River totem pole out of timbers he'd hauled out of the channel, while I turned into William Mul-



holland in a white suit, retracing the life of the father of modern Los Angeles from the day he rode into town, a young immigrant Irishman on a horse, and spotted the Los Angeles River for the first time, through old age and obloquy in the aftermath of the collapse of the San Francisco Dam and the greatest



manmade disaster in the history of California.

Pat and Roger and I learned two things from the performance, both obvious. First, rivers want to wend. They don't want to go in straight lines. Second, we discovered that the river's totem was the sycamore tree. Later I found out that in any Southwestern

riverine ecology, the sycamore is the climax vegetation, the leafy aristocrat that waits for everything else to be in place and in good health before it returns.

IN ONE SENSE, Friends of the Los Angeles River is the act of calling, then welcoming the sycamores back. In another sense, Friends of the Los Ange-

Friends of the Los Angeles River now has thousands of members and has planted hundreds of trees. Here a group of Friends clean up the estuary where the river enters San Pedro Bay.



In the southeast corner of San Fernando Valley (Griffith Park), a remnant of natural river bed contrasts with the concrete embankment.

les River is an artwork, an ongoing performance. I've always tried to reserve for the organization the freedom claimed by artists — to take any tack, to work in every realm — in proceeding on behalf of the river. By calling Friends of the Los Angeles River a forty-year artwork I hoped to fortify us all against impatience and frustration and cynicism. It took more than forty years to screw the river up. I'm sure it will take more than forty years to bring it back to life again. From the beginning we said that not until the yellow-billed cuckoos (one of the extirpated

birds of the Los Angeles River system) were singing in the branches of the sycamore tree and the steelhead trout were swimming up the river to spawn (the last steelhead was caught in the Los Angeles River in 1940, the year after the Army Corps of Engineers concreted the channel), would Friends of the Los Angeles River's work be done.

By calling Friends of the Los Angeles River a forty-year artwork, I hoped to remind myself that bringing the river back to life would take longer than my own life, and that all

of us are in service to an *idea*: creating a Los Angeles River Greenway from the mountains to the sea.

Today, the Wallenboyd Theatre is long gone. The once-derelict neighborhood where it thrived is now frantic with toy wholesalers. Roger Wong is dead of AIDS. The Arroyo Seco — at least the top end of it, the Devil's Gate Dam area above Pasadena — has been renamed the *Hahamungna* — a pre-European name for the canyon

Sensitive Chaos

Flowing forms our heart, cyclones, rivers and birdflight. We flowed as embryos, and our bones still spiral and loop with the markings of past eddy currents. Here is spiritual guidance in the greatest book of Jungian-Taoist fluid history.
—Peter Warshall

- Trains of vortices arise if a solid object is drawn in a straight line through stationary liquid.
- In the open sea mighty vortices can arise in which the whole dynamic force of the suction centre becomes visible.
- A photograph of a vortex taken underwater reveals the spiralling surface between the water and the air which is being sucked in.
- The activity of thinking is essentially an expression of flowing movement. Only when thinking dwells on a particular content, a particular form, does it order itself accordingly and create an idea. Every idea — like every organic form — arises in a process of flow, until the movement congeals into a form. Therefore we speak of a capacity to think fluently when someone is skilfully able to carry out this creation of form in thought, harmoniously co-ordinating the stream of thoughts and progressing from one idea to another without digression — without creating "whirlpools."

It took more than forty years to screw the river up.

I'm sure it will take more than forty years
to bring it back to life again.

meaning "Flowing Water, Fertile Valley." Friends of the Los Angeles River now has several thousand names on its mailing list and a board of directors that tends to roll its eyes when I talk about FoLAR as a forty-year art work. As of today, the Arroyo's confluence with the Los Angeles River has hundreds of young trees, including dozens of young sycamores. Seeing these young sycamores that Scott Wilson and Lynn Dwyer-Haid and so many oth-

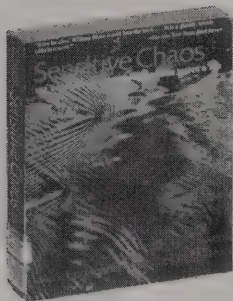
ers here have planted makes me realize how far we've come.

Seeing how much concrete there still is in the river — they estimate that it took 17,000 men pouring three million barrels of the stuff by hand — reminds me how far we have to go. I think that the most delicate, and in many ways the most important task is that, while we're imagining and working for the Los Angeles River that we want to be, we find the beauty in what al-

ready is. For that, I invite all of you right now to take a look around [waits while each of us looks around]. When in doubt, I always say, come down to the river. Let it talk to you. In his poem "Night Song of the Los Angeles Basin," Gary Snyder says that underneath the concrete, the river is always there, laughing. And it will laugh last. ♡

FOR SCOTT WILSON

*All of us are in service
to an idea: creating a
Los Angeles River
Greenway from
the mountains
to the sea.*



Sensitive Chaos

(The Creation of Flowing
Forms in Water & Air)

Theodor Schwenk. 1990; 232 pp.

ISBN 0-85440-304-3

\$29.95 (\$33.45 postpaid).

Anthroposophic Press, RR 4, Box 94A1,
Hudson, NY 12534; 518/851-2054

■ *In a stream:* The wave form remains at the same spot with new water constantly flowing through it.

In the sea: The wave form wanders across the surface, the water itself remaining at the same place.

Through wave movements, of whatever kind, water reveals its extremely impressionable nature. A stone in the stream, a gentle breeze blowing over the surface of a

lake, the slightest thing will cause the water to respond immediately with a rhythmical movement. Two things are necessary for this rhythmical movement to come about: the water itself and some other activating force. Thus water is like a sense organ, which becomes "aware" of the smallest impacts and immediately brings the contrasting forces to a moving rhythmical balance.

■ As the sounds of the external world enter, whole vortex trains pass through the fluid of the internal ear. In connection with this

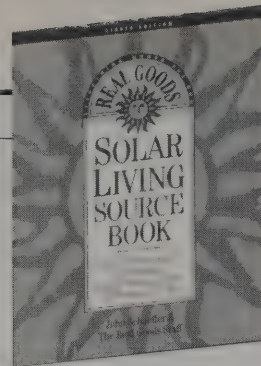
Trains of vortices arise if a solid object is drawn in a straight line through stationary liquid.

a sorting out of rhythms takes place, by which the long wave trains of the low frequency low notes reach the end of the basilar membrane, while the short, quick rhythms of the high notes fade away right at the start. On a minute scale and as an organic function, this is the counterpart to the great sorting out process of the different types of waves in the oceans of the earth.



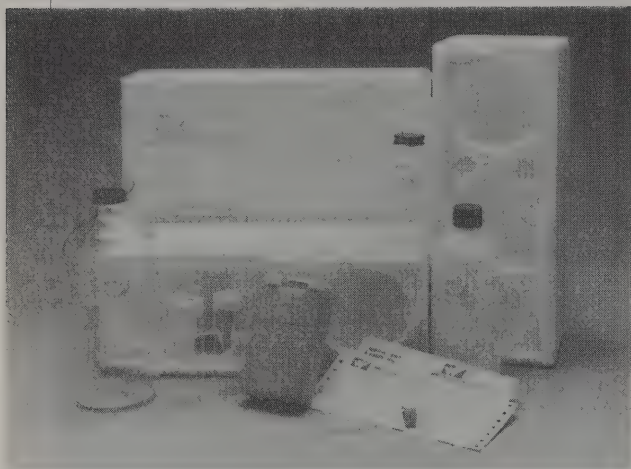
The Real Goods Solar Living Sourcebook

This is the eighth edition of this whopper of a book. As in the past, it's part Real Goods catalog of energy-making and -saving hardware, and part textbook covering the principles and practical application thereof, spiced with sometimes controversial articles from various commentators (including me). The selection of products must be the largest available anywhere. Most items will be familiar to folks with previous *Sourcebooks*, but the information is noticeably better as the experience of a growing number of customers accumulates. The *Sourcebook* remains the best introduction to energy-efficient technology for common folks. —J. Baldwin



Solar Living Sourcebook

(The Complete Guide to Renewable Energy Technologies and Sustainable Living, 8th edition)
John Schaeffer & The Real Goods Staff. Chelsea Green Publishing Co./Real Goods Independent Living Books, 1994; 656 pp. ISBN 0-930031-68-7
\$23 (\$27.95 postpaid) from Real Goods Trading Corp., 966 Mazzoni Street, Ukiah, CA 95482; 800/762-7325



Laboratory Water Test for Private Water Supplies (private wells, springs, catchment, etc.)

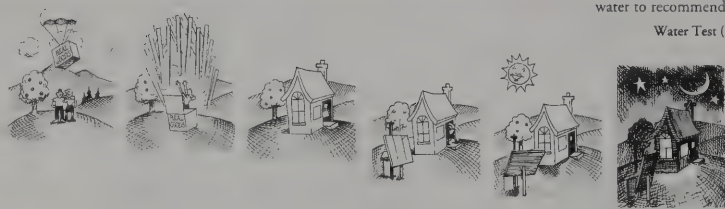
We've found through lots of experience that if you're not on municipal or pretreated water, we can't conscientiously sell you a water purification system without first knowing these specific particulars about the water you have: pH, total dissolved solids (TDS), hardness, iron, manganese, copper, and tannin. This test normally costs \$40, but we're providing it to our customers for only \$17. This analysis tells us enough about your water so that we can make an informed recommendation to you regarding what system will work best with the water you have.

Upon receipt of your \$17 we will send you a questionnaire and a small plastic bottle. Fill out the questionnaire, return the water sample, and you'll have your results back in a few weeks. It's the only way we can both be sure you're getting the right filter for your system! This test does not show contamination problems such as lead, coliform bacteria, or chemicals. Refer to our water check with pesticide option for this.

Remember, if you're on a municipal or pretreated water system we don't need to test your water to recommend a filtration system for you.

Water Test (non-city water)

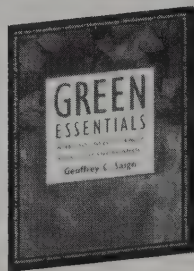
\$17



Green Essentials

This straightforward overview of the major worldwide environmental issues is subtitled — with considerable hubris — "What you need to know about the environment." It's certainly not everything you need to know, but environmentally concerned Geoffrey Saign neatly sketches the heart of each controversy in cool, nonpolitical terms reminiscent of a good course review book. He suggests solutions (but not how to implement them) along with his consideration of the problems.

With *Green Essentials* in hand, you can, for instance, assess the veracity of TV blowhards, politicians, and the excesses of both champions and detractors of spotted owls. Especially useful for parents, teachers, business leaders and others who need to catch up on the facts, numbers, and reasoning behind "all that environmentalist stuff." —J. Baldwin



Green Essentials

(What You Need to Know about the Environment)
Geoffrey C. Saign. 1994; 528 pp. ISBN 1-56279-061-7
\$16.95 (\$18.95 postpaid) from Mercury House, 201 Filbert Street, Suite 400, San Francisco, CA 94133; 800/998-9129

Topsoil is being lost in the United States at an estimated rate of 5 billion tons a year — 2/3 because of poor agricultural practices. The former Soviet Union loses 1.5 billion tons, and India, 6 billion tons. The United States is one of the few countries that is monitoring its soil losses. The Soil Conservation Service (of the Department of Agriculture) completes a National Resources Inventory every 5 years. The 1987 report estimated that 3 billion tons of soil eroded on 422 million acres of cropland, with 2

tons lost per acre lost to water erosion and 3.3 tons per acre lost to wind erosion. The 1992 report will be available in 1994 or 1995. Haiti, where most farming is done on mountain slopes, loses up to 15,000 acres yearly to erosion. Worldwide, agricultural topsoil losses are estimated at nearly 25 billion tons yearly.

The 80 to 100 million gas-powered lawn mowers in the United States produce pollution equivalent to 3.5 million newer cars.

The Waterbirth Handbook

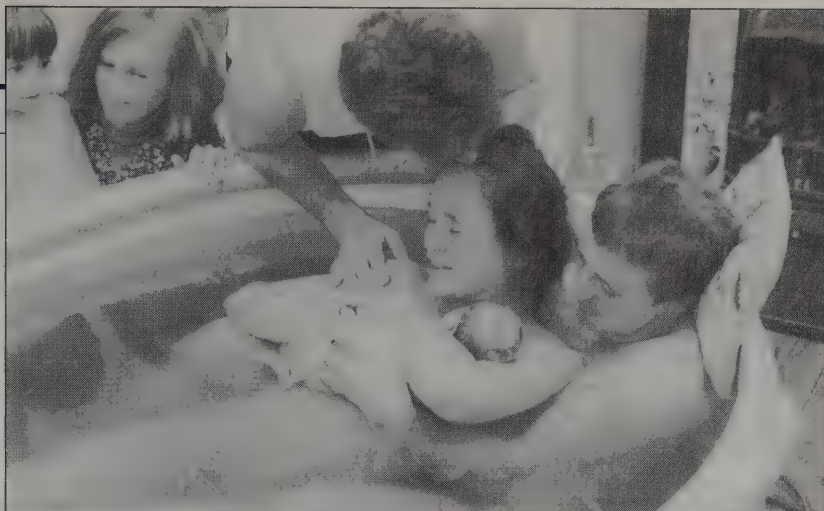
A loving and realistic look at what some thought twenty years ago would be a passing fad. This childbirth technique is based on the obvious: warm water tends to relax a human body under stress. For the ultimate marathon of physical and emotional stress, many women in Europe and quite a few in the US are having their babies in water.

Published in England, where it seems many hospitals have birthing pools and bathtubs in their maternity units, this book provides instruction for home and hospital waterbirths as well as general information on childbirth preparation. A good portion of the book is first-person birth stories accompanied by glorious photographs.

To their credit, the authors haven't candy-coated the issue of pain. Because of its excellent information on relaxation and pain relief, *The Waterbirth Handbook* is recommended even if you are planning to labor on dry land. In a balanced manner, the authors carefully explain such options as hypnosis, massage, acupuncture, homeopathy, and, yes, pharmaceuticals.

Checklists and instructions abound in *The Waterbirth Handbook*, as do appendices, which include a list of hospitals with their own birthing tubs (all in the UK) and an international list of contacts.

—Linda Morgan



Getting to know the new baby.

■ Peni Whelan was 22 when she was expecting her second child. She had severe arthritis and was confined to a wheelchair because it was unbearably painful for her to move her legs.

"... My husband Jerry sat behind me massaging my back while my four-year-old daughter sat in front splashing water at me. The midwives left us peacefully on our own a lot of the time, whilst they read or watched television in the other room.

"I felt instant relief in the water. I felt I could actually cope. It was wonderful. Imagine you've burnt your hand and put it under cold water. It reduces the intensity of the pain once you've cooled it down and taken the sting out of it. It still hurts, but not so much. It's bearable.

"I changed positions a few times. At one stage, I was pushing my feet against the other side of the pool, but there wasn't much strength in my legs, so I couldn't really push. Most of the time Jerry was sitting in the pool, holding me under the arms so I could float on my back, and that was the position I gave birth in. The two hours I spent floating in the pool were wonderful.

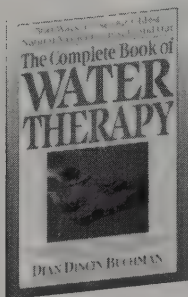
"When the baby was born I got hold of her and lifted her out. The cord was coiled round her neck and the midwives disentangled it. She smiled at me wide-eyed under the water and when I brought her up, it was as if she was saying, "Well, hi guys!"

The Waterbirth Handbook

(The Gentle Art of Waterbirthing)
Roger Lichy & Eileen Herzberg. Gateway Books, UK, 1993; 207 pp. ISBN 0-946551-70-7
\$13.95 (\$16.45 postpaid) from Atrium Publishers Group, PO Box 108, Lower Lake, CA 95457; 800/275-2606



The Complete Book of Water Therapy



The Complete Book of Water Therapy

Dian Dincin Buchman. 1994; 261 pp. ISBN 0-87983-613-X

\$11.95 (\$14.95 postpaid) from Keats Publishing, PO Box 876, 27 Pine Street, New Canaan, CT 06840; 800/858-7014

If you've ever unwound in a hot bath at the end of a long day, then you know how therapeutic water can be. Water, alone or with natural ingredients, can do more than just relax — it can revive, refresh and heal both mind and body. This book is an excellent guide to water therapy, from the specific (sprains) to the general (fatigue), recommending, among other methods, baths, compresses, and showers. Its approach is holistic, with valuable ancillary advice to speed healing, and specific instructions to seek formal medical treatment when necessary.

Worth the price for the section on herb and medicated baths alone.

—Andrea Chase

● Water therapy is a system of natural healing. It uses the body's need for water, and its physiological responses to water, to prevent, correct and treat a broad range of health and injury problems. These methods, also known as hydrotherapy, were developed in Europe over a century ago, and make up what is one of the least expensive and most versatile and dependable healing systems ever devised.

Water therapy is effective because of body physiology. Not only does the body need water to dissolve, transport, and finally absorb nutrients; water also extracts and discards waste materials through internal organs and through the skin.

Frank

These pages are excerpted from Jim Woodring's new collection of Frank cartoons. As howlingly beautiful as his black-and-white work is, I just wish we could have printed some of the color art to be found there.

Jim is also responsible for *The Book of JIM* (WER 81:112) and for "Frank's Real Pa" — a 164-panel opus that appeared in the *Millennium Whole Earth Catalog* — and for the ongoing *JIM* comics. Any example of his work is as bracing as a glass of ammonia. —JD

Frank

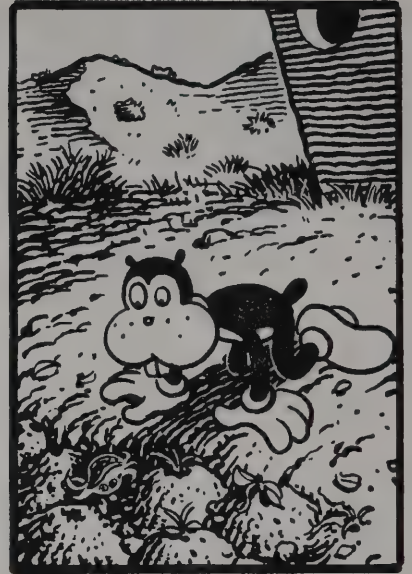
Jim Woodring, 1994;

96 pp. ISBN 1-56097-153-3

\$14.95 (\$17.95 postpaid) from

Fantagraphics Books, 7563 Lake City Way NE,
Seattle, WA 98115; 800/657-1100

JIM comicbooks and *The Book of JIM* are
also available from Fantagraphics. Their
catalog is free from the address above.





FIELD NOTES

TEXT AND
DRAWINGS BY
CRAIG CHILDS

August
Sycamore Creek, Arizona

We were sitting in her car, drenched. Rivulets ran from our bodies into the cracks of the seat. I turned to her, the stream ecologist who was looking through her window back into the flooding canyon. The flood was out of sight from the road, between the volcanic Sonoran desert walls.

She had wanted a sample of water from the impact wave, but we could hardly have stayed down there with lightning bursting into the canyon, and water levels coming up. We had swum back through the granite chutes as the creek muddied. We had slid down waterfalls to get back to the space in the walls where we could escape to the ridge. The sky was cracking two seconds after the flash and the rain was a direct corridor between the creek and the air.

In her car, she was disappointed. She wanted to still be there. We drove out, playing a country music station too loud. Every time we crossed over a creek bed, she asked, "Is it running?"

Craig Childs writes his journals while wandering the canyonlands of the American southwest. He is the author of Stone Desert (Westcliff Publishers, March 1995). — Andrea Chase



"Yes," I said.

"Turbid?"

"Yes."

So the next day we returned for the afternoon storms, which crush the desert in August. We brought packs, set camp in the canyon itself. This time the flood came at night. In the morning she was waist deep in the creek, taking measurements. She wrote the information in the back of a paperback she had brought. It was a dog-eared copy of one of Edward Abbey's desert books. After I read her findings, I flipped to the inside pages. Abbey had written: "Stay out of there. Don't go. Stay home and read a good book, this one for example. The Great American Desert is an awful place. People get hurt, get sick, get lost out there. Even if you survive, which is not certain, you will have a miserable time. The desert is for movies and God-intoxicated mystics, not for family recreation."

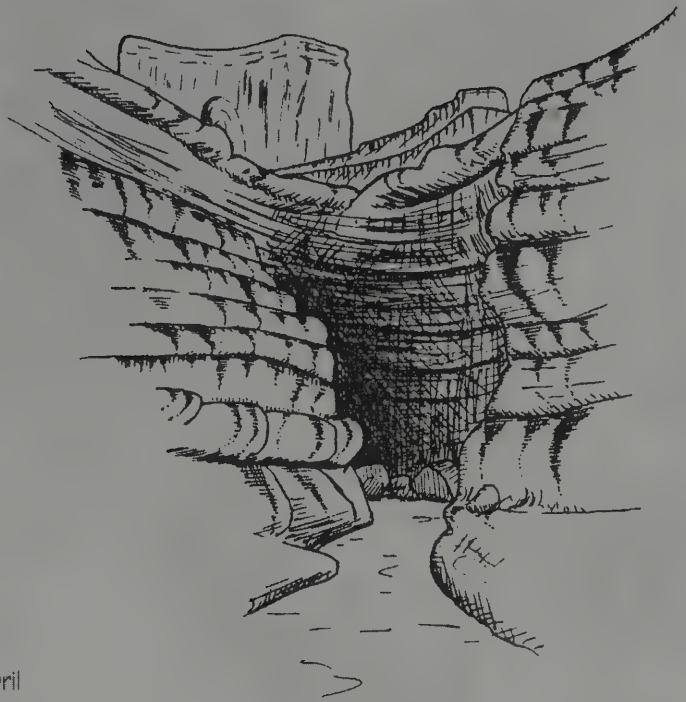
I closed the book and waited for the floodwaters to drop back.

Mid-January
Indian Creek Wilderness
Study Area, Utah

In more desperate times I would have waited here to die, on the chance the secret knowledge of water would have suddenly revealed itself. This is the place where I have found water. Two hundred feet up. High over the dusty Anasazi ruins containing dried corn-cobs and broken pottery dating back a thousand years.

The water is not liquid, but rather it is a spiral painting. The Anasazi spiral symbolizes water, like the circular reflections, against overhanging rocks, of water striders copulating and dancing on a pool's surface. Spirals are found etched or painted onto the rock walls of canyons throughout the Southwest, signifying the most important and rarest element of life here.

Water's presence in the desert is guarded like a secret. Follow the hummingbirds, seek out the groves of cottonwoods, recognize the formations that will erode to cradle water pockets. It may be there. It may not. When I have been here long enough, when the days turn to dreams, I can wait beneath this spiral for a drop to slip loose and fall into my open mouth.



Mid-April
White Canyon, Utah

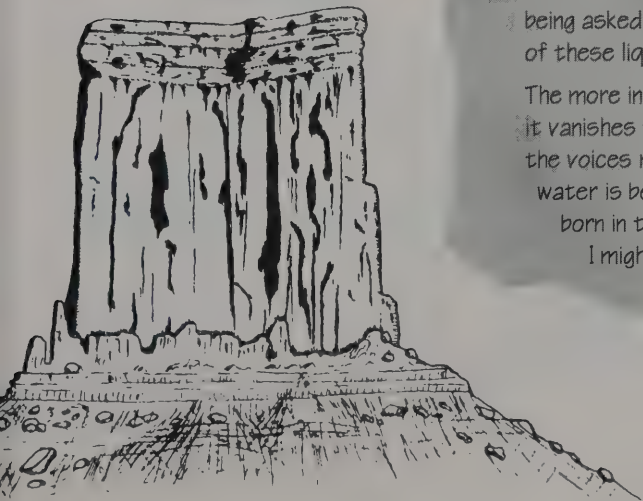
A hand on each face of the side canyon, I am the first to reach the waterfall. The thin passageway in stone is heavily contorted, rising fifty feet into winding fins of sandstone like a Michelangelo in abstract. The walls nearly kiss each other, but remain separate enough to leave a narrow cleft. I move through above my knees to the base of the falls; I almost turn to warn her that we are about to encounter people.

I hear their voices. At least ten of them. Some are singing, others are chanting, and still others are involved in important conversations, high above us. I squint and look straight up, trying to see through this steep passage. Before I speak to warn her, I listen carefully and find that I cannot hear their particular words. I listen more closely and realize that the voices are difficult to distinguish from one another. When she wades beside me and peers into the slanting shadows, she hears these same things.

There is no one perched on the catwalks and footholds. This is a mirage for our ears. We are alone and the water is speaking. As water cascades through halls, from one room to the next, voices are created. The inflections are audible, the words almost clear. I hear what could be questions being asked and, after a thoughtful pause, there are answers. Amidst all of these liquid words, I am speechless.

The more intently I listen, the less I hear, like staring at a rainbow until it vanishes from my eyes. When I tilt my head back and empty my mind, the voices return. Somewhere in the words the secret knowledge of water is being spoken. If I could know more, if I had stayed where I was born in the desert or if my patience could stretch for years longer,

I might comprehend even a few of the words. Then I would hold one more piece of the secret. ♡





This Alfa Romeo was built in 1913.

streamlined

Designers have been messing with "streamlining" for nearly a hundred years — some seeking efficiency, some mere stylishness. This arcane collection of mostly pre-1960s efforts ranges from the very clever to the just plain oddball. Zeppelins, autos, locomotives, aircraft, and even non-hurlers such as telephones are represented. The book also chronicles an ongoing, subtly fought battle between engineering and frippery — a fight that's far from won despite recent interest in efficiency. I find this sort of book inspiring; the great majority of the designs (all shown in wonderful photographs) were not familiar to me, and many demonstrate an adventurous spirit not often seen these days. You can feel technology edging forward despite dead ends and absurdities. Fascinating is not too strong a word. —J. Baldwin



streamlined

(A Metaphor for Progress: The Esthetics of Minimized Drag)
Claude Lichtenstein & Franz Engler, Editors. Lars Müller Publishers, Switzerland, 1994; 320 pp. ISBN 3-906700-71-2
\$35 (\$38 postpaid) from D.A.P., Distributed Art Publishers, 636 Broadway, Room 1201, New York, NY 10012; 800/338-2665

Painting the ill-fated Zeppelin "Hindenburg."



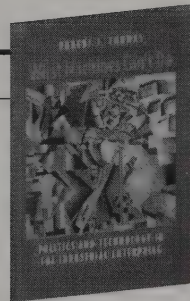
What Machines Can't Do

Designers design. Production engineers figure out how to make the designed item. A production crew — perhaps unionized — actually makes it. Marketing moves the product. Administrators attempt to coordinate the effort. It's sort of a dance — an Industrial Gavotte. The steps are a necessary and thus integral part of technology, yet do not directly involve machinery. Many of the moves are irrational from at least one point of view. In case studies, this technical book examines the infighting that determines the choices, strategies, organization, and all the decisions that get a new technology into general use. It's a good lesson in why nothing is simple. —J. Baldwin

Not only did the use of temps encourage much closer supervision, but it obstructed

investments — formal (e.g., in training) and informal (e.g., job rotation) — that would deepen the knowledge base of workers in the area. Ironically, it also made the entire process more reliant on the small and already overtaxed manufacturing engineering staff.

The performance of a season of plays and the manufacture of a line of automobiles are not as dissimilar as they may seem. The quality of performance or production in each case critically influences the quality of the outcome. Flexibility is no less important in the process of auto manufacturing than it is in repertory theater. Creativity and innovation are essential to effective performance in both. Yet the theater has a language, concepts, and a framework that enable the process as a process to be evaluated, critiqued, and, most important, improved. To this point, manufacturing does not



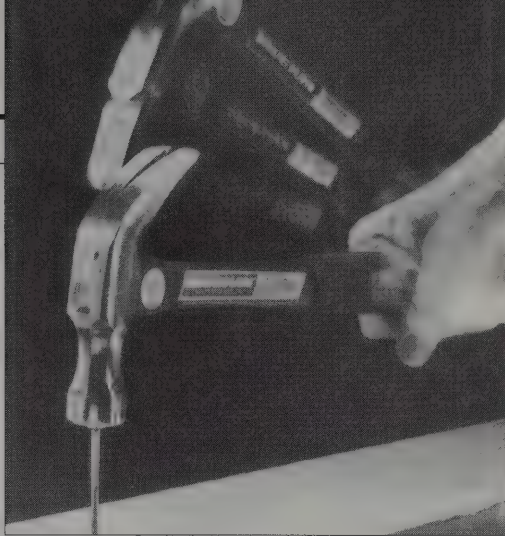
What Machines Can't Do

(Politics and Technology in the Industrial Enterprise)
Robert J. Thomas. University of California Press, 1994; 314 pp. ISBN 0-520-08701-1
\$16 (\$19 postpaid) from California/Princeton Fulfillment Services, 1445 Lower Ferry Road, Ewing, NJ 08618; 800/777-4726

Thus, to the science of production we must add the art of manufacturing. That is, in the end, another thing machines can't do.

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Many carpenters attribute dreaded "carpenter's elbow" to the use of solid steel hammers — a high price to pay for a tool, however indestructible it may be. (My steel hammer is thirty-five years old. My elbow doesn't work properly anymore. Hmmm.) Vaughan doesn't say their Steel Eagle prevents elbow damage (it probably doesn't) but I can vouch for their claim that it feels noticeably less harsh and nasty. An internal shock absorber in the head does the trick. Balance is unusually good. —J. Baldwin



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Totally cool — a circular chainsaw blade that mounts to any small grinder to allow unlimited, easy 3-D sculpting in wood. The chain may be re-sharpened or replaced as necessary. —John Benecki

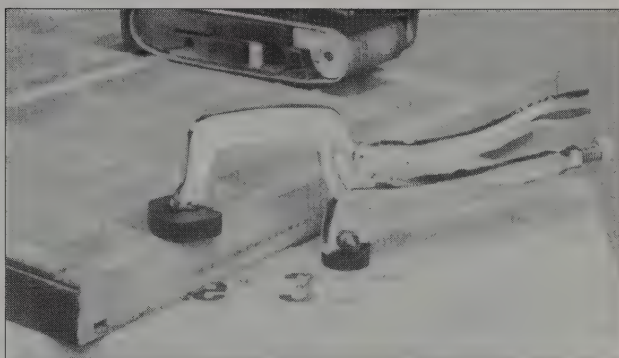
NB. Like all fangy chainsawteae, these discs harbor evil in their little hearts, and are inherently vicious. Be deeply careful. —J. Baldwin

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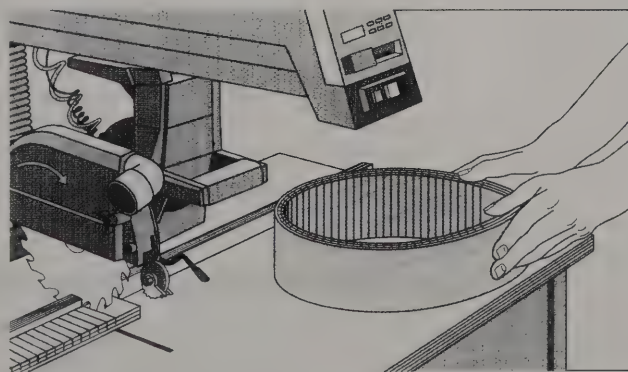
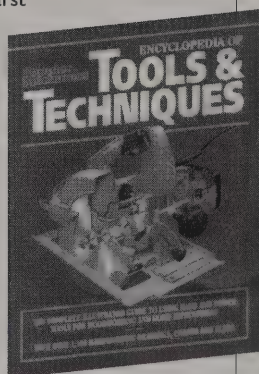
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Popular Mechanics Encyclopedia of Tools & Techniques

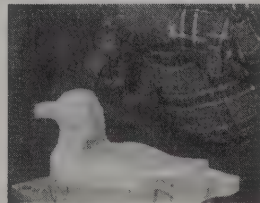
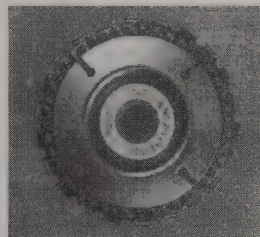
Shop smarties probably won't find much new here, but to the tool-challenged, this large-format book will provide much of the knowledge you'll need to get started in woodworking. Illustrations are exceptionally good; explanations are adequate, in the dry, vocational-school shop teacher manner. Swallow the whole thing, buy a few basics (the book tells you which to get), then mess up some wood for practice. You'll be well on the way to competence. —J. Baldwin

Popular Mechanics Encyclopedia of Tools and Techniques

Joe Oldham, Editor. Hearst Books, 1994; 352 pp. ISBN 0-688-12460-7 \$30 (\$31.50 postpaid) from William Morrow and Co., Wilmore Warehouse, 39 Plymouth Street, Fairfield, NJ 07004



Kerfing plywood. The radial arm saw is ideal for kerfing plywood so that it will bend. Space the deep kerfs at intervals of about one-half inch. Test the kerfs first on scrap board.



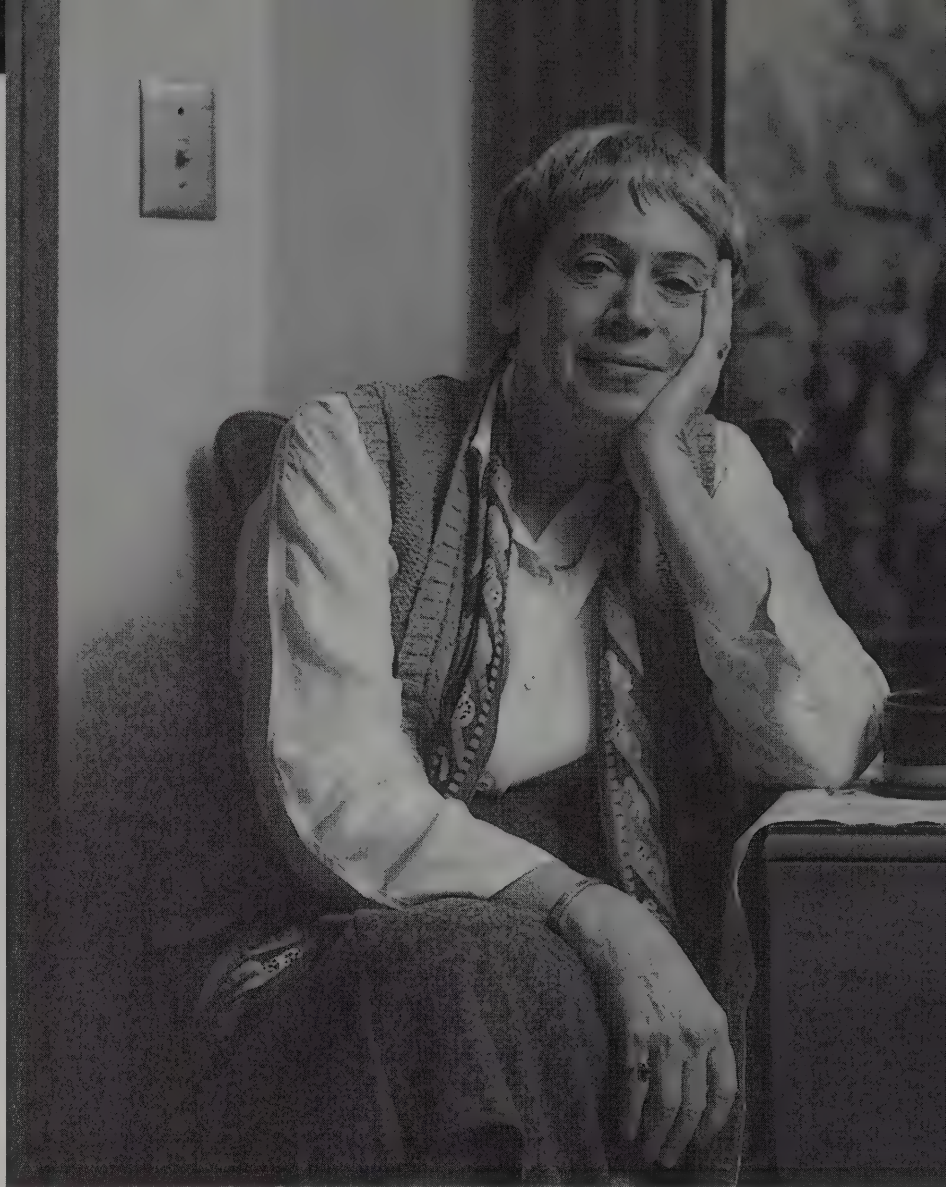
Coming Back from the Silence

U

RSULA LE GUIN was born in Berkeley, California, in 1929, to Alfred Kroeber, one of the founders of modern anthropology, and psychologist/writer Theodora Kroeber. The family spent winters in Berkeley and summers in the rural Napa Valley, sixty miles north of San Francisco. Le Guin graduated from Radcliffe in 1951 and took her M.A. (in Romance languages) from Columbia in 1952. Fulbright scholarships allowed her to spend a year in Paris (1953) and two years in London (1968 and 1975). In 1953, she married the historian Charles Le Guin, and they eventually made their home in Portland, Oregon, where they have raised three children.

With over three million copies of her books in print, Le Guin is one of the most widely read and most prolific writers in North America. She won the National Book Award (*The Farthest Shore*, 1973) and was an NBA finalist for *The Left Hand of Darkness* (1970), *The Tombs of Atuan* (1972), and *Always Coming Home* (1985). She has also received the Hugo, Kafka, and Nebula Awards.

Jonathan White is the founder and former president of the Resource Institute. Focusing on Northwest coastal culture and traditions, the nonprofit Institute held "floating seminars" aboard the schooner *Crusader*, in Northwestern waters from Puget Sound up to Alaska. Participants included leading thinkers and artists in diverse disciplines. Ten years of these seminars led to the assembly of *Talking on the Water: Conversations About Nature and Creativity* (reviewed on p. 42), from which this interview was excerpted in abridged form.



Jonathan White: What attracted you to science fiction?

Ursula Le Guin: I didn't exactly choose science fiction. I went where I got published, which took a long time because my work is so odd. For the last fifty or sixty years, literature has been categorized as "realism," and if you weren't writing realism, you weren't respectable. I had to ignore that and say to myself that I could do things in science fiction that I could never do in realism. I tend to be prickly about this subject because I get

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JONATHAN WHITE

INTERVIEWS

URSULA LE GUIN

With fantasy, we simply agree to lift the ban on the imagination and follow the story, no matter how implausible it may be.

JW: Didn't you say once that fantasy may not be actual, but it's true?

UL: Wouldn't you say any attempt to tell a story is an attempt to tell the truth? It's the technique you use in the telling that is either more or less plausible. Sometimes the most direct way to tell the truth is to tell a totally implausible story, like a myth. That way you avoid the muddle of pretending the story ever happened, or ever will happen.

Who knows how stories really work? We're so used to stories with all the trappings of being real that we've lost our ability to read anything else. When you read a native American story, you have to relearn how to read. There's nothing in them to draw you in. There's no sweetening of the pill. Maybe there's a coyote, but there's no description. We're used to a lot of fleshing out, and we're used to being courted and drawn into the story.

JW: Nora Dauenhauer, a Tlingit woman and coauthor of *Haa Shuka, Our Ancestors* reminded me last summer that native American stories are usually told to an audience that already knows them. In fact, they've heard the stories over and over again, through many winters. As a result, the storyteller often uses shorthand — a single word or phrase — to remind the audience of a larger event with many details. She pointed out that we are telling stories like this all the time, particularly among friends and family with whom we share a history. We may say, "Remember that time we were caught in a dust storm outside of Phoenix?" And that's the story, all of it.

UL: Yes, exactly. You don't describe the sky or the clouds or what you were wearing. There isn't any of the scene-setting in native American stories. It bothers me when I read gussied-up native American stories. They're no longer sacred. When we embellish a native American story, it turns into just another story. Our culture doesn't think storytelling is sacred; we don't set aside a time of year for it. We don't hold anything sacred except for what organized religion declares to be so. Artists pursue a sacred call, although some would buck and rear at having their work labeled like this. Artists are lucky to have a form in which to express themselves; there is a sacredness about that, and a terrific sense of responsibility. We've got to do it right. Why do we have to do it right? Because that's the whole point: either it's all right or it's all wrong.

JW: We tend to have a linear, cause-and-effect way of looking at



tired of being put down as a science fiction writer. The fact is, in the postmodern era, all the barriers are breaking down pretty fast.

Science fiction is a child of realism, not of fantasy. A realistic story deals with something that might have happened but didn't, right? Many science fiction stories are about worlds that don't exist, but could exist in the future. Both realism and science fiction deal with stories that might be true. Fantasy, on the other hand, tells a story that couldn't possibly be true.

Photograph by Penny Wolin

Illustrations by Margaret Chodos-Irvine
from *Always Coming Home*

the world. I wonder if one of the things that attracts us to stories is their ability to change our way of seeing?

UL: The daily routine of most adults is so heavy and artificial that we are closed off to much of the world. We have to do this in order to get our work done. I think one purpose of art is to get us out of those routines. When we hear music or poetry or stories, the world opens up again. We're drawn in — or out — and the windows of our perception are cleansed, as William Blake said. The same thing can happen when we're around young children or adults who have unlearned those habits of shutting the world out.

The tribal storyteller is not just providing spiritual access but also moral guidance. I think much of American writing today is an exploration of ethical problems. I'm thinking particularly of novels by black women such as Paula Marshall, Alice Walker, Gloria Naylor, and Toni Morrison. The stories these women write are gaining literary praise, but they're also doing something terribly important for their people, who are not just black Americans but all Americans. In a sense, these women are fulfilling the ancient role of tribal storytellers, because they're trying to lead us into different spiritual and moral realms. They're intensely serious about this, and that's why they're so beloved as novelists.

JW: Stories can also help us remember who we are. In *The Book of Laughter and Forgetting*, Milan Kundera says, "What is the self but the sum of everything we remember?"

UL: Yes. To *remember*, if my Latin is correct, actually means to put the parts together. So that implies there are ways of losing parts. Kundera talks about this aspect of storytelling, too. In fact, he says that history, which is another kind of story, is often deliberately falsified in order to make a people forget who they are or who they were. He calls that "the method of organizing forgetting."

History is one way of telling stories, just like myth, fiction, or oral storytelling. But over the last hundred years, history has preempted the other forms of storytelling because of its claims to absolute, objective truth. Trying to be scientists, historians stood outside of history and told the story of how it was. All that has changed radically over the last twenty years. Historians now laugh at the pretense of objective truth. They agree that every age has its own history, and if there is any objective truth, we can't reach it with words. History is not a science, it's an art.

There are still people who insist on teaching history

as a science, but that's not how most historians work anymore. My husband, Charles, who is a historian, says, "I don't know the difference between story and history. I think it may not be a difference in kind, but a difference in their attempts to be truthful."

The history of the last hundred years still has a tremendous intellectual bias toward the white European point of view. Defined by historians as the written record, it conveniently illegitimizes all oral traditions and most indigenous people right from the start. In fact, in its view, everybody but white Europeans is "primitive." If you don't have a written language, you aren't part of history.

JW: Are the current changes in how we look at history also changing the way we look at indigenous cultures?

UL: Absolutely. It's a de-centering process. We've been pretending that Europe was the center of the world for too long. With the help of anthropologists, and now historians, we are finding that there is no center, or that there are many centers. Nobody has "the answer." It's amazing how much resistance there is to this. Everybody wants to be "the people," everybody wants to be "the center." And everybody *is* the center, if only they'd realize it and not sneer at all the other centers.



JW: Because history, as it has been practiced, concerns itself only with the written record, language acquires a loaded role in terms of our perception of reality. Like history, language can become a tool of forgetting, a tool of estrangement. As a writer, how do you work against that?

UL: This is a tricky area. As a writer, you want the language to be genuinely significant and mean exactly what it says. That's why the language of politicians, which is empty of everything but rather brutal signals, is something a writer has to get as far away from as possible. If you believe that words are acts, as I do, then one must hold writers responsible for what their words do.

One of the strangest things about our culture is our ability to describe the destruction of the world in exquisite, even beautiful, detail. The whole science of ecology, for instance, describes exactly what

The vision of the
"peaceable kingdom" denies
wilderness. In the Christian tradition,
the denial of violence, of the fact that we
eat each other in order to live, removes
you from this world. Heaven is supernal
bliss where there is no violence,
no eating, no sex.

we're doing wrong and what the global effects are. The odd twist is that we become so enamored of our language and its ability to describe the world that we create a false and irresponsible separation. We use language as a device for distancing. Somebody who is genuinely living in their ecosystem wouldn't have a word for it. They'd just call it the world.

We can't restructure our society without restructuring the English language. One reflects the other. A lot of people are getting tired of the huge pool of metaphors that have to do with war and conflict. The "war against drugs" is an obvious example of this. So is the proliferation of battle metaphors, such as being a warrior, fighting, defeating, and so on. In response, I could say that once you become conscious of these battle metaphors, you can start "fighting" against them. That's one option. Another is to realize that conflict is not the only human response to a situation and to begin to find other metaphors, such as resisting, outwitting, skipping, or subverting. This kind of consciousness can open the door to all sorts of new behavior.

I am struck by how much we talk about rebirthing but never about *rebearing*. The word itself is unfamiliar to most people. Yet both women and men are capable of rebearing, women literally and men metaphorically. A door opens just by changing the name. We don't have to be reborn; we can *rebear*. This is part of the writer's job, either to rebear the metaphors or refuse to use them. Gary Snyder's lifelong metaphor is *watershed*. How fruitful that is! Another of his is *composting*, which is a lovely word that describes the practice of creating.

JW: The use of language to name the world seems to have two sides. On one hand, things are given names as an expression of intimacy and respect; and

on the other hand they are given names to create distance and separation. In your story, "She Unnames Them," for example, barriers are broken down as the names for animals are taken away.

UL: "She Unnames Them" is really an Adam and Eve story that I subverted. Eve takes all the names back because they were either wrong from the start or they went wrong. As she does this, the barriers between herself and the world are dismantled. At the end of the story, she has no words left. She's so close to the animals that she feels vulnerable and afraid, yet full of new desire to touch, smell, and eat.

Why do I feel like the way we give names is wrong? I don't want to flog that little story to death, because it was meant partly as a joke, but we do use names to cut ourselves off. Talking about a dog is different from talking about Rover. In the language of war, we don't talk about killing or even casualties anymore. We use strange euphemisms instead, like "body count" and "friendly fire." The language of pretended objectivity is often used this way, too. We manipulate names as categories of reality, and the names then become screens between ourselves and the world. The names become a tool of division rather than of community.

My father worked with the Yurok Indians of California, among other tribes. If you read his Yurok myths, you learn that every rock and every tree had its name. It was a small world they lived in, not a planetary one. They were in intense community with it, and their naming was a way of respecting their independence. But anything is reversible, and naming can become the destruction of community, where we hide from the real world by using more and more words. I know people who refuse to learn the names of trees. They have a concept of "tree," but the names simply get between them and the real tree.



I grew up in the Napa Valley without learning the English names for many of the plants and animals. When I started writing *Always Coming Home*, which takes place there, I had a wonderful time learning the flora and fauna of the area. For a while, I knew the name of every wildflower. But what you learn late doesn't stick. Now when I come across a flower whose name I've forgotten, I say, "How do you do, little yellow flower, whatever your name is." I used to crave to know the names, and I enjoyed learning them. It's funny, by naming a thing, do we think we get control over it? I think we do. That's how magic works. If you know the name of a thing, then you know its essence. At some level, I think we all must believe that.

We're naming creatures, but we need to respect that some things are beyond names. Like the mysterious essence of an animal in the wild. If our names make them appear tame or petlike, as in Walt Disney's world, then it's degrading. Some of the California Indians knew that when you name an animal, such as a deer, you are addressing its metaphysical nature. They called that universal quality "Deerness" or "The Deer." It's a profoundly mysterious and important matter, and very hard to put into words, but I feel I know what they're talking about. When these Indians hunted, they asked Deerness to help them. The deer that comes to the hunter is related physically to all other beings, but it is also an embodiment of Deerness. It's the gift of Deerness. This way of looking at the world can apply to every living being. When we name something we are naming its essence, and therefore its sacredness.



JW: In *Buffalo Gals*, you say that all creatures talk to one another, whether we are able to hear or not. But this conversation — this community — is not a simple harmony. "The peaceable kingdom, where lion and lamb lie down, is an endearing vision not of this world": What do you mean by that?

UL: The vision of the "peaceable kingdom" denies wilderness. In the Christian tradition, the denial of violence, of the fact that we eat each other in order to live, removes you from this world. Heaven is

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supernal bliss where there is no violence, no eating, no sex. When lions and lambs lie down in the wilderness, the lamb ends up inside the lion. That's how it is. You can deny that in order to gain another world. But if the only world you want is this one — and this one seems quite satisfactory to me — then the myth of the "peaceable kingdom" is only a charming painting.

JW: You continue in *Buffalo Gals*: "Some rash poets get caught in the traps set for animals and, unable to endure the cruelty, maim themselves to escape." You give the example of Robinson Jeffers. Was Jeffers maimed because he took too personally his disappointment in the dark side of nature?

UL: Jeffers was a very strange man and poet, with an enormous component of cruelty and violence in his work. He had incredible sympathy with animals. He could give you an animal in a word or two like very few poets can. I think he honestly felt them, even though he often perceives them through violence. I can't explain Jeffers, he has always awed and annoyed me. I'm grateful to him as one of my predecessors writing about California. Even as a teenager, I knew he had California right.

The poem that most reveals Jeffers' self-hatred is the one about the cavemen who torment a mammoth to death. They trap it and roast it alive. He's full of this kind of disgust for humanity. Yet he soars out into a great vision; never a happy vision, but a great vision. He's a difficult case when you're talking about animals.

JW: The trap of shamefulness seems like an easy one to fall into. If we want to be alert, we have to take all this in — the violence, the killing, the cruelty —

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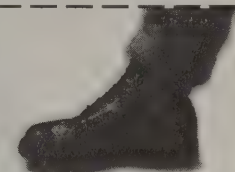
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UL: Yes. But since we're capable of compassion, we know it hurts. This causes all sorts of difficulties. My aunt was a biologist, and I watched her drop an artichoke into a pot of boiling water and say, "I wonder if it can feel that?" She was a very hard-headed biologist. Humans have to think about these things, whether we like it or not. It's the nature of our humanity to feel uncomfortable and full of guilt and shame and confusion. But we still participate, because we have to eat. Much of what animals do naturally we have to do consciously. That's our gift and our curse. All we can do is be conscientious about it — do it rightly, not wrongly.

JW: In *Always Coming Home*, hunting for food and skins was primarily done by children and adolescents. Under the supervision of adults, young girls and boys were allowed to hunt rabbit, possum, squirrel and other small game, and deer. Why was hunting considered inappropriate for adults?

UL: You're supposed to outgrow it. The same thing is true of war. In one chapter, I describe a small war with the Pig People. It's modeled on the warfare of the Northern California Indians, which was usually just a matter of standing on a hill and shouting insults. Sometimes people got mad enough to hurt each other, and occasionally someone was killed. Mostly it was the young boys who engaged in war, not the whole tribe. What comes up in the chapter on the Pig war is the report that there were adults involved in the war. That's a shameful thing in the Kesh society. Both hunting and war are looked upon as occupations for adolescents — adolescents who are already a little out of control and needing to prove themselves. You can continue to hunt into adulthood if you're really good at it, of course, but I was implying that it's something most people outgrow.

People should be able to figure out their place in the life-death cycle without killing animals. The trouble is that it relates to what Hemingway said: "You can't be a man until you've killed another one." I say bullshit! Why don't you try it without a gun? Maybe there's a gender difference there. Maybe a woman can do it and a man can't. I hate to say that, but you wonder. It isn't built into women to be hunters in our culture. Even a fisherwoman is unusual.

Having a close relationship with an animal, particularly one that lives a short life, can be an intense, constant reminder of mortality. Cats only live ten years, so most of us see a lot of cats die in our lifetime. Going through the death of a pet, particularly for children, can put us through the same emotional process that hunting does. We don't have

to kill an animal to get there. It's a very interesting subject, and I hope the difference is cultural and not inherent to gender.

JW: Another aspect of hunting is that it teaches us where our food comes from.

UL: That's a different subject. That's not a spiritual process but a matter of facing the facts. What are you willing to do for your food? Most of us would kill an animal to eat it, if we had to. I could, and would, if I were hungry or defending myself. I'm not saying I would enjoy it, but for those two reasons I would kill an animal. I have Buddhist friends who don't even swat flies. I can't go that far. If something is biting me, I squash it. A pest is a pest.



JW: It's clear from your work that language and writing have become sharp tools for reestablishing human society's (and humanity's) place in the larger household. Much of that effort to envision anew, at least in the last thirty years, has been inspired by feminist principles. You say your goal is always to subvert, to create metaphors for the future "where any assumption can be tested and any rule rewritten. Including the rules of who's on top, and what gender means, and who gets to be free." How were you introduced to the feminist movement? What role has it played in your writing?

UL: My introduction was slow and late. All my early fiction tends to be rather male-centered. A couple of the *Earthsea* books have no women in them at all or only marginal woman figures. That's how hero stories worked; they were about men. With the exception of just a few feminists like Joanna Russ, science fiction was pretty much male-dominated up to the 1960s. Women who wrote in that field often used pen names.

None of this bothered me. It was my tradition, and I worked in it happily. But I began coming up against certain discomforts. My first feminist text was *The Left Hand of Darkness*, which I started writing in 1967. It was an early experiment in deconstructing gender. Everybody was asking, "What is it to be a man? What is it to be a woman?" It's a hard question, so in *The Left Hand of Darkness* I eliminated

gender to find out what would be left. Science fiction is a wonderful opportunity to play this kind of game.

As a thought experiment, *The Left Hand of Darkness* was messy. I recently wrote the screenplay version, where I was able to make some of the changes I wish I could make to the novel. They're details, but important ones, such as seeing the main character, Genly, with children or doing things we think of as womanly. All you ever see him doing are manly things, like being a politician or hauling a sledge. The two societies in the book are somewhat like a feudal monarchy and Russian communism, which tend to be slightly paranoid. I don't know why I thought androgynous people would be paranoid. With twenty years of feminism under my belt, I can now imagine an androgynous society as being much different — and far more interesting — than our gendered society. For instance, I wouldn't lock the people from the planet Gethen, where the story takes place, into heterosexuality. The insistence that sexual partners must be of the opposite sex is naive. It never occurred to me to explore their homosexual practices, and I regret the implication that sexuality has to be heterosexuality.

I gradually realized that my own fiction was telling me that I could no longer ignore the feminine. While I was writing *The Eye of the Heron* in 1977, the hero insisted on destroying himself before the middle of the book. "Hey," I said, "you can't do that, you're the hero. Where's my book?" I stopped writing. The book had a woman in it, but I didn't know how to write about women. I blundered around awhile and then found some guidance in feminist theory. I got excited when I discovered feminist literary criticism was something I could read and actually enjoy. I read *The Norton Book of Literature by Women* from cover to cover. It was a bible for me. It taught me that I didn't have to write like an honorary man anymore, that I could write like a woman and feel liberated in doing so.

Part of the women's experience is shared with men and part of it isn't. Experiences that are only women's, like childbirth, have been described a thousand times, mostly in novels by men. These descriptions have nothing to do with the actual experience. Generally, I don't think men in our culture want to hear from women about childbirth because men want to have their way. So, women's stories have been cast in the form of men's stories. A women's story has a different shape, different words, different rhythm. Theirs is the silent crescent of experience that we are just beginning to find words for.

There are always areas
of vast silence in any culture, and part
of an Artist's job is to go into those
areas and come back from the silence
with something to say.

The incredible upsurge of woman writers and poets in the 1980s is a sign that women are finding their voices. They're beginning to talk about their experiences without using a male vocabulary or meeting male expectations. It's sticky, because the language is so male-centered that it excludes much of the feminine experience. Sex, for instance, is always described from a male point of view, as penetration, insemination, and so on. A lot of women still deny that their experience is different than a man's. They do this because it's scary to realize you don't have the words to describe your own experience. The few words we do have we get from our mothers and the women who taught us when we were young. Virginia Woolf says, "We think back through our mothers."

One of the functions of art is to give people the words to know their own experience. There are always areas of vast silence in any culture, and part of an artist's job is to go into those areas and come back from the silence with something to say. It's one reason why when we read poetry, we often say, "Yeah, that's it. That's how I feel." Storytelling is a tool for knowing who we are and what we want, too. If we never find our experience described in poetry or stories, we assume that our experience is insignificant.

JW: The natural landscape is another of those vast silent areas you speak of. As a writer, have certain landscapes had a particularly strong influence on you?

UL: Mostly I don't know where my writing comes from. Experiences are composted, and then something different and unexpected grows out of them. In 1969, my husband and I spent a couple nights in French Glen, the mountainous area of southeastern Oregon. It was my first sight of that sagebrush high-desert terrain, and it got into me so instantly and authoritatively that a book grew out of it — *The Tombs of Atuan*. The book isn't about the desert but about a community surrounded by a terrain similar

to what you find in southeastern Oregon. The desert is a buried metaphor in the book. I have no idea of the reason for the emotional economy of it, but I know the book came to me as I was driving back from French Glen.

The central landscape of my life is the Napa Valley in Northern California. I grew up there and I consider it my home. I've often thought, "How can I get this beautiful valley into a book?" That was the main impulse of *Always Coming Home*. I wanted to write about people living in the Napa Valley who used it a little more wisely than we do now. When I was a child, it was the most beautiful and diversified agriculture you ever saw. There were vines and orchards and truck gardens. It was the way a cultivated valley ought to be. But there was too much money in vines, so they pulled up the orchards and truck gardens. The only thing growing there now is money.



JW: What role has your interest in indigenous people played in your work?

UL: I wasn't aware that it played any role at first. Although my father was an anthropologist and an archaeologist, my entire formal training in this area amounts to one physical anthropology class. Obviously I have some temperamental affinity with my father, but I often say that he studied real cultures and I make them up. He had an eye for exact concrete detail, and an interest in it. He also had a respect for tools and the way things work. I got a lot of that from him.

When I started thinking about *Always Coming Home* I took a lot of time to discover what the book was going to be. Once I realized I wanted it to grow out of the Napa Valley I looked around for a literary precedent. I couldn't find anything except a couple of swashbuckling romantic novels about Italian wine-growing families. The only literature of that earth was native American oral literature. The people of the valley itself, the Wappo, are gone. Even the name they used for themselves is gone. There are people with a little Wappo blood, but there is no language, no tradition, and there are no stories left. So I read other Northern Californian myths and legends and songs. There's a good deal

of information available there. My father collected much of it himself. I read widely from traditions all over the United States. My problem was to find a way to use the literature without stealing or exploiting it, because we've done enough of that to native American writing. I certainly didn't want to put a bunch of made up Indians into a Napa Valley of the future. That was not what I was trying to do. What I got from reading California oral literature was a sense of a distant and different quality of life. You can't hear the voices but you can pick up the feeling.

JW: In *Always Coming Home*, the historical period, which followed the Neolithic era for some thousands of years, is referred to by the Kesh as the time when people lived "outside the world." What do you mean by that?

UL: I was playing with the idea of our present growth technology from the Industrial Revolution on through the present — the last two hundred years. We don't know when this period will end, but it will. We tend to think of our present historic era as representing the highest evolution of human society. We're convinced that our exploitive, fast-growing technology is the only possible reality. In *Always Coming Home*, I put people who believe this into one little capsule where the Kesh could look at them as weird aberrations. It was the most disrespectful thing I could do, like wrapping a turd in cellophane. That's sort of a Coyote metaphor.

JW: Speaking of Coyote, she wanders in and out of much of your recent work. How did you meet up with her?

UL: She trotted through a project of mine in 1982. It was an essay on utopia called "A Non-Euclidean View of California as a Cold Place to Be" and when the tracks of utopia and Coyote crossed, I thought, "Yes, now I'm getting somewhere!" The idea of utopia has been stuck in a blueprint phase for too long now. Most of the writing you see is similar to Callenbach's *Ecotopia*, which is another "wouldn't the future be great if we did this or that?" Or, in science fiction, it's been dystopia: utopia gone sour. These blueprints aren't working anymore.

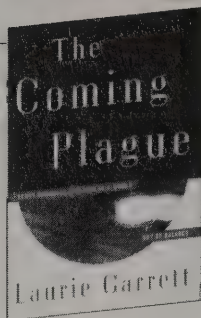
Coyote is an anarchist. She can confuse all civilized ideas simply by trotting through. And she always fools the pompous. Just when your ideas begin to get all nicely arranged and squared off, she messes them up. Things are never going to be neat, that's one thing you can count on.

Coyote walks through all our minds. Obviously, we need a trickster, a creator who made the world all wrong. We need the idea of a God who makes mistakes, who gets into trouble, and who is identified with a scruffy little animal. 🐾

The Coming Plague

Not long ago, experts on infectious disease predicted that mankind would soon win its long battle with microbes, eradicating disease-carrying bacteria and viruses from the earth. But this extensively researched book warns that AIDS is a wake-up call to many epidemics to come. In *The Coming Plague*, Laurie Garrett shows how human factors, more often than not, have been responsible for the spread of new and dangerous diseases. Increased human population and mobility and human encroachment into formerly isolated ecosystems have created environments conducive to the quick spread of infectious diseases. The human destruction of ecosystems has caused imbalances that microbes have quickly filled. The improper use of antibiotics has induced mutant strains of viruses that are immune to our drugs.

Ebola in Zaire spread because poor hospitals reused syringes. DDT used to eradicate malaria-carrying mosquitoes killed cats in Machupo, Bolivia, leading to an increase in the rodent population and the resulting spread of Bolivian hemorrhagic fever. Raw sewage dumped



The Coming Plague

(Newly Emerging Diseases in a World Out of Balance)

Laurie Garrett. Farrar Straus Giroux, 1994; 750 pp. ISBN 0-374-12646-1 \$25 (\$29.25 postpaid) from Putnam Publishing Group, Order Dept., PO Box 506, East Rutherford, NJ 07073; 800/788-6262

in India may have led to a cholera outbreak in Peru. Contamination of the blood supply helped spread the HIV virus.

This frightening book is important because it forces us to consider the interdependence of nations in our attempts to eradicate disease, and microecology and our effects on it, before it is too late.

—Wade Fox

Ultimately, humanity will have to change its perspective on its place in Earth's ecology if the species hopes to stave off or survive the next plague. Rapid globalization of human niches requires that human beings everywhere on the planet go beyond viewing their neighborhoods, provinces, countries or hemispheres as the sum total of their personal ecospheres. Microbes, and their vectors, recognize none of the artificial boundaries erected by human beings.

The first cholera cases hit Lima hospitals on January 23; days later cholera broke out some 200 miles to the north in the port town of Chimbote.

As the El Niño water spread out along the Pacific coast of the continent, carrying with it bilged algae, cholera appeared in one Latin American port after another. Eleven months into the Western Hemisphere's pandemic, cholera had sickened at least 336,554 people, killing 3,538. Throughout those months the microbe's emergence was aided by obsolete or nonexistent public water purification systems, inadequate sewage, and airplane travel. Cases reported in the United States involved individuals who boarded flights from Latin America unaware that they were infected.

Imperial Secrets of Health and Longevity

This book reveals the fourteen secrets of longevity written by Qian Long, the fourth Manchu emperor, who reigned for sixty years. Qian Long's secrets are surprisingly simple. Many resemble the advice of our doctors, alternative health practitioners, parents, and grandparents. They are about restraint and moderation with a special Chinese twist.

—Sharon Hennessey



Imperial Secrets of Health & Longevity

Bob Flaws. 1994; 114 pp.

ISBN 0-936185-51-1

\$9.95 (\$13.95 postpaid) from Blue Poppy Press, 1775 Linden Avenue, Boulder, CO 80304; 800/487-9296

According to the *Nei Jing (Inner Classic)*, "He who would nourish life surely follows (the changes of) the four seasons, adapts to the cold and heat, harmonizes joy and anger, and dwells in calm." This means that people should adjust their life schedule and activities to conform to the changes of the four seasons. Spring and summer are yang seasons. Yang means warmth, activity upward and outward movement, and growth. Thus spring and summer are times of growth and greater activity. Fall and winter are yin seasons. Yin means cold, relative quiescence, and downward and inward movement. Therefore, fall and winter are times of rest, inward reflection, and storage and recuperation.

Li Dong-yuan believed it was important not to eat or drink excessively cold foods and liquids. Since the process of digestion is a process of making 100 degree F soup, eating chilled or frozen foods or drinking iced water or drinks can douse the fire of digestion. According to Li, in that case, clear and turbid are not separated and the result is turbid dampness and phlegm which obstructs the free flow of qi and blood. This then can give rise to a large number of diseases. In fact, Sun Bing-yan, a famous contemporary Chinese cancer specialist, believes that such cold and damp turbidity is at the root of most cancers. This is especially interesting since some Western can-

Dao Yin Self-Massage.



The Hot Zone

Like a hybrid of William S. Burroughs and John McPhee, this book combines the unspeakable insect horror of the former with the clarity and humanity of the latter. It fits nicely with my personal menu of literary preferences: 1) good writing, 2) subject matter, vocabulary, and concepts gracefully introduced and adequately explained, and 3) scares the bejeezus out of me. It's the story of the Ebola virus, an ancient and extremely lethal filovirus from the African rain forest.

Ebola's genetic code is a single strand of RNA, the most primitive of genetic coding mechanisms. Neither really alive nor really dead, it's a creature from the earliest evolutionary crossroads. Like a mineral crystal, its sole purpose/thought is to replicate itself.

The virus can wait indefinitely in the dust for the right kind of protein molecule to come along. Once Ebola latches on to a suitable bit of carbon-based stickiness, it literally dissolves the host organism from within. A human host "crashes and bleeds out" after ten days of agonizing breakdown, as a viral-rich soup of the decomposed host comes squirting out through every bodily orifice. Meltdown is accompanied by violent seizures, thought to be among Ebola's strategies for finding a new host. (Preston describes a Belgian nun hosing down the staff of a rural African hospital as she slipped her mortal coil. All but two of those thus anointed joined her up yonder within two weeks.) —Robert Glantz

● Most of the fatal cases of Ebola Sudan can be traced back through chains of infection to the quiet Mr. Yu. G. A hot strain radiated out of him and nearly devastated the human population of southern Sudan. The strain burned through the town of Nzara and reached eastward to the town of Maridi, where there was a hospital.

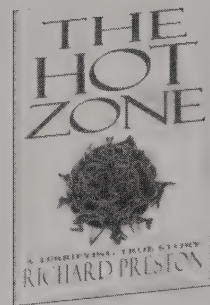
It hit the hospital like a bomb. It savaged patients and snaked like chain lightning out from the hospital through patients' families. Apparently the medical staff had been giving patients injections with dirty needles. The virus jumped quickly through the hospital via the needles, and then it hit the medical staff. A characteristic of a lethal, contagious, and incurable virus is that it quickly gets into the medical people. In some cases, the medical system may intensify the outbreak, like a lens that focuses sunlight on a heap of tinder.

The virus transformed the hospital at Maridi into a morgue. As it jumped from bed to bed, killing patients left and right, doctors began to notice signs of mental derangement, psychosis, depersonalization, zombie-like behavior. Some of the dying stripped off their clothes and ran out of the hospital, naked and bleeding, and wandered through the streets of the town, seeking their homes, not seeming to know what had happened or how they had gotten into this condition. There is no doubt that Ebola damages the brain and causes psychotic dementia. It is not easy, however, to separate brain damage from the effects of fear. If you were trapped in a hospital where people were dissolving in their beds, you might try to escape, and if you were a bleeder and frightened, you might take off

your clothes, and people might think you had gone mad.

■ He laid out his blood tubes and syringes on a mat. Then he began drawing blood from people. He worked all night in the hut on his knees, collecting blood samples and taking care of the patients as best he could.

Sometime during the night, he was drawing blood from an old woman. Suddenly she jerked and thrashed, having a seizure. Her arm lashed around, and the bloody needle came out of her arm and jabbed into his thumb. Uh, oh, he thought. That would be enough to do it. The agent had entered his bloodstream.



The Hot Zone

Richard Preston. 1994; 300 pp.
ISBN 0-679-43094-6

\$23 (\$25 postpaid) from Random House,
Order Dept., 400 Hahn Road, Westminister,
MD 21157; 800/733-3000

cer theorists believe that cancer patients lack adequate digestive enzymes.

● According to [Traditional Chinese Medicine] theory, the ears, nose, and feet are all areas in which there is a *simulacrum* or *homunculus*. A *simulacrum* means mirror

image. A *homunculus* means a little person. What this means is that Chinese doctors believe there are maps of images of the entire body on each of these body parts. By stimulating these parts, one can stimulate the entire organism with all its organs and functions. It is as if each part of the body

were a hologram of the entire body, that the entire body exists in each part. Certainly this is true from an embryological and genetic point of view. Chinese doctors have also identified other *homunculi* on the bones of the thumb and the thigh, on the face, and on the hands as well.



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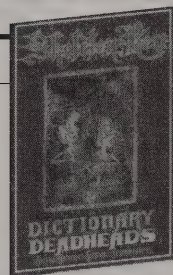
Skeleton Key

Quite simply, this is the funniest, most lucid account ever put together about those former "Warlocks" of 710 Ashbury St., the Grateful Dead. Presented in the form of a lexicon, *Skeleton Key* "defines" some of the surreal jargon and stories that the "Dedicated" have woven around "The Boys" over the past thirty years. Whether you already are "on the bus" or are merely trying to make sense of it all — which any self-respecting Deadhead will tell you is your first mistake — this book is almost as good as being "there." But not quite . . .
—Tom McIntyre

- **Energy Balls** • Balls of energy, as seen especially by the psychedelically sensitized Heads, that can be moved, played with, or passed around the audience.
- Greg Collis, veteran of shows since Magoo's Pizza Parlor '65, says he became aware of this phenomenon at a show at Winterland in 1974 during "Dark Star," when someone tossed him a ball of glowing energy that he caught and then threw up to the balcony, where he saw another Head pass it on.
- **Trustafarians** • Derogatory moniker for people with trust funds who dress like hip-

pies and are seen to be hiding their affluence; from "Rastafarian."

- **Quietly Freaking** • Barely coping on the outside while going gelatinous on the inside. The term belongs to New Yorker David Pelovitz, who recalls a close call at New Jersey's Brendan Byrne Arena. "I was carrying eight joints in a tin of Altoid mints," explains Pelovitz. "They were under tissue paper with a few mints on top. The guard hit the tin in the frisk and checked it out. Since those mints look like pills, I had to convince him they were mints without looking so nervous that he would lift the tissue paper. I had to explain they were just mints, totally calmly, and the whole time I was quietly freaking!"
- **False Jerries** • Garcia look-alikes who catch Heads' eyes at shows. Hair color and weight can be used to date *faux* Garcias to a specific vintage. "Did you see that guy? He looked a lot like Jerry — the '82 Jerry."
- **One Heartbeat Away** • With Al Gore in the number two spot, this is how far we are from our first Deadhead — or at least Dead fan — President. While the Veep has "been to shows," and sports J. Garcia ties, the real tourhead-waiting-to-happen on Pennsylvania Avenue is Tipper. A three-



Skeleton Key

(A Dictionary for Deadheads)
David Shenk & Steve Silberman.
Main Street Books, Doubleday & Co.,
1994; 388 pp. ISBN 0-385-47402-4
\$14.95 (\$17.45 postpaid) from Bantam,
Doubleday, Dell, Fulfillment Dept.,
2451 S. Wolf Road, Des Plaines, IL
60018; 800/323-9872

show veteran, Tipper took her son, Albert, and her entire White House staff, to a summer '93 show at the RFK. She boogied on the side of the stage, met the band during the break, and, being a drummer herself, was thrilled to stand directly behind Hart during drums.

The Second Lady, whose favorite albums are *Workingman's Dead*, *American Beauty*, and *Europe '72*, returned the favor by inviting Hart, Garcia, and Weir to the White House for tea. She has "tons" of tapes, she says, and aides report that during the '92 campaign, her bus was a hotbed of tape trading.

Handy Tips on How to Behave at the Death of the World

BY ANNE HERBERT

Sometimes it comes in a dream, and sometimes in one more newspaper headline. And then you know. With your cells and past and future you know. It's over. We are killing it all and soon it all will be dead. We are here at the death of the world — killers, witnesses, and those who will die. How then shall we live?

PROBABLY GOOD TO TELL TRUTH as much as possible. Truth generally appreciated by terminal patients and we all are.

Good to avoid shoddy activities. You are doing some of last things done by beings on this planet. Generosity and beauty and basicness might be good ways to go. Avoid that which is self-serving in a small way. Keep in mind standing in for ancestors including people who lived ten thousand years ago and also fishes. Might be best to do activities that would make some ancestors feel honored to be part of bringing you here. Silent statement to predecessors: Well, yeah, we blew the big thing by killing ourselves. I tried to honor you as much as I could in that context by doing the following: _____

TRANSFORM YOUR OWN POWER-OVER BEHAVIOR to whatever extent possible. Life system of world being efficiently killed by human habit of going for power over. Tasteful to try to profoundly correct that to extent that you can even though it's too late. E.g. Men profoundly understand and change around relations with women. White people profoundly change in relations to people of color. Humans profoundly change in relationship to other beings on planet. This constitutes thank you note and note of apology to the whole history of the planet. I mean it has been rather great, sunsets, oceans, some art, some moments between beings,



smells of fresh mornings. As we kill it all by dominance habits too huge to stop, we can thank it for the good times and say sorry by changing our own participation in the dominance stuff in some profound way. Doing this kind of change will involve confusion, embarrassment and awareness of activities and attitudes you have not been conscious of. Doing this kind of change will involve increased aliveness for you personally, a fine thing to bring to a dying planet.

Be in radical alignment with particular forms of aliveness being smashed. Particular species, human cultures, styles of living are being obliterated brutally now. In as much as we all going to die fairly soon, the stylish thing to do is to align with one of the lifeforms and help it be itself as long and strong as possible.

Eschew blandness. Eschew causing other's pain. We are all the target so wear bright colors and dance with those you love. Falling in love has always been a bit too much to apply to one person. Falling in love is appropriate for now, to love all these things which are about to leave. The rocks are watching, and the squirrels and the stars and the tired people in the street. If you love them, let them know, with grace and non-invasive extravagance. Care about the beings you care about in gorgeous and surprising ways. Color outside the lines. Practice random kindness and senseless acts of beauty. This is your last chance. ♡

Anne Herbert used to be assistant editor of CoEvolution Quarterly. She's a writer and social-change activist who lives in Berkeley, California.

Illustration from *The Mystery of Coniunctio*, reviewed next page. Emergence of the Opposites.

Talk Dirty to Me

This book is physically beautiful: a small intense hardcover with a black jacket and a luscious illustration on the cover. It's like a little Bible of sensual pleasure.

In talking about sexuality and sex, Sallie Tisdale draws on her own experiences and fantasies as the basis for an examination of what it is that arouses us, and why, and of such questions as "What is gender?" "Why does it matter?" "What are we attracted to?" "What is perversion?" She conducts the examination with kindness and clarity.

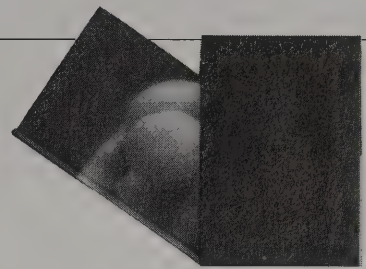
Tisdale tells us that she is attracted to some men simply because they are so male, and that a "teetering, long-legged woman can make me feel a little ga-ga . . ." At the same time, the traditional polarity of "men" and "women" is breaking down. What qualifies us to call ourselves "male" or "female," anyway?

The most important thing I found here is the reminder of just how wide, huge, deep our sexual selves really are, or can be. As Tisdale says about the famous

Kinsey scale of zero through six: "The range should not be zero through six, but zero through six hundred, or six thousand." —Matisse Enzer

● I cherish femaleness and the company of other women simply because, well, they're women. I don't know what I mean when I say that men won't "get something" I'm trying to explain, but I mean it, anyway. There are many feelings and ideas I would discuss only with another woman. Most of all, I crave the ease of women's company, the inexplicable psychic repose their presence allows. I don't have to know what they are, what I am, or what men are, to know the difference in how it feels to be with a woman or with a man.

● There is one specific element to many fantasies that might be called a kind of dominance but isn't dominance as we usually define it. I mean the dream of being dominated by sex itself — being forced, as it were, by the intensity of the sex to submit to and accept sex, be bound by sex, mastered by sex. To give up resistance to



Talk Dirty to Me

(An Intimate Philosophy of Sex)

Sallie Tisdale. Doubleday & Co., 1994; 338 pp. ISBN 0-385-46854-7 \$22.95 (\$25.45 postpaid) from Bantam, Doubleday, Dell, Fulfillment Dept., 2451 S. Wolf Road, Des Plaines, IL 60018; 800/323-9872

appetite. In this dream everything else disappears for real — not for a single instant, not almost, not pretend. Our ego is completely submerged. I can dream of being *made* to until I admit that I *want* to, that I want to without having to ask. And without asking I will get exactly what I want. This is the fantasy of everyday life — that those around us will meet our needs, will just know what we want, will *understand*. It's the fantasy of pure love.

The Mystery of the Coniunctio

In these images, a king and queen touch, bathe, love, die and become one. Edward Edinger outlines the Jungian take on these idiosyncratic alchemical emblems from sixteenth-century Frankfurt. But he pushes you beyond psychological theory.

After reading the book, cut out the images, paste them on cardboard, and color them. Use them to tell stories, to keep a diary, to read the future, to develop analytical models, to entertain your children, to seduce your lover, to understand yourself. —Evelyn Pine

● The more familiar one becomes with alchemical symbolism, the more evident it is that the alchemical images apply to everything; they're operative everywhere. So if one is going to use the imagery for understanding a certain experience or phenomenon, one does need to define the vessel that a given alchemical process is taking place in. And the three most common vessels are the ones I've mentioned here: the individual psyche, a relationship between two people, or a process going on in a larger group.

■ I'm reminded of a bird that keeps showing up outside my window. It can see its reflection in the window and it can't leave it



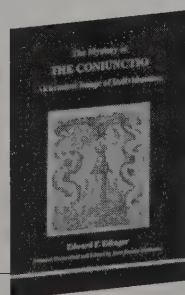
Resurrection of the United Eternal Body.

alone. It has to attack that reflection and its persistence is just astonishing. This has been going on for weeks! It cannot stand the presence of a second, and I think of this picture. But its behavior does derive from a coniunctio image: the urge to annihilate the second is a desire to reestablish unity.

● Psychologically this would mean that the beginning of the coniunctio is set off by an ardent desire — Aphrodite is the mother of desires — and this desire is at the same time an Annunciation of the Holy Ghost. That the dove descends from the star indicates that it's a messenger from the transpersonal or cosmic Self.

You see desire impels us toward an object in anticipation of pleasure, whereas an annunciation is an assignment of a difficult task — it's an opus. Those two are actually the same thing, and the way one experiences either depends on the level of psychological development.

In youth we follow our desires with relative abandon until experience teaches us to know better. But in the course of individuation, we learn that to follow one's libido consciously becomes a heavy task, an opus. And in this picture these two aspects of the relation of the ego to transpersonal libido are united in the single image of the dove. You might say it's a union of work and play.



The Mystery of the Coniunctio

(Alchemical Image of Individuation)

Edward F. Edinger. 1994; 110 pp.

ISBN 0-919123-67-8

\$14 (\$16 postpaid) from Inner City Books, Box 1271, Station Q, Toronto, Ontario, M4T 2P4 CANADA; 800/444-2524 ext. 12

Now Watch Him Die

In this work, Henry Rollins reflects on his experience of watching his best friend being shot to death. Rollins's writing expresses a human mind engaged in the daily struggle for survival. Burn your entire pop psychology library and leap into the work of Henry Rollins.

—Louis Collonge

■
I stood over your cold dead body
And stared down
All your mother's relatives were standing
outside
You were so damn still
Were you scared like I was Joe?
What were you thinking?
Did you look into your killer's eyes?
When we came into the house
I knew that piece of shit was going to waste
us both
But he only got you
I've been thinking a lot about hanging
myself
It's always the same white extension cord
I think of the house and the shots
The pool of your blood boiling in the dirt
It's been two weeks and you haven't called

■
I want to meet a stranger
I want to tell her everything
I want to howl
I want her to make sense to me
I need someone
I need

■
The following was written under the influence of Death, exhaustion, repetition, shame, guilt, paranoia, fear, alienation, rage, and the overwhelming will to survive and endure. This is how it is and this is what it does and it's all the truth. No matter how this reads, don't think for a minute that I would rather be anywhere else than in front of you playing my guts out, giving 150%. You mean more to me than I can explain. Perhaps I take all of this too seriously.



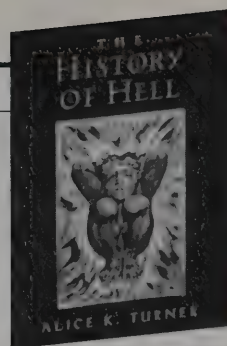
Now Watch Him Die

Henry Rollins. 1993; 188 pp.
ISBN 1-880985-14-4

\$11 (\$12 postpaid) from
2.13.61 Publications, PO Box 1910,
Los Angeles, CA 90078

The History of Hell

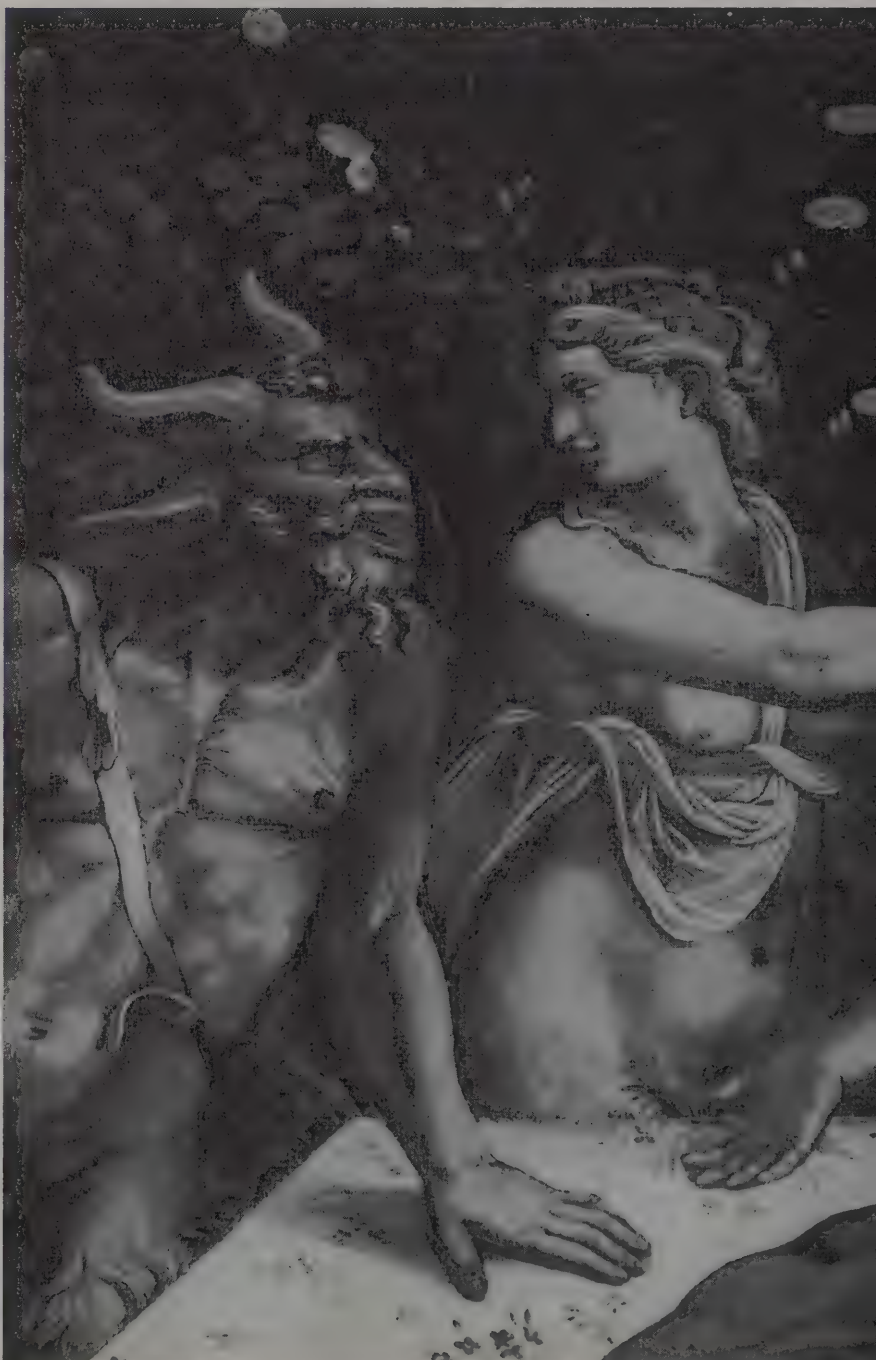
We can learn much about a culture by how it envisions Hell. This book's perspective is different and, in many ways, more illuminating than that of a standard history text. And it's just plain fun. Ms. Turner's survey is western in focus, running the gamut from Sumerian goblins to Sartre's existential "hell is other people." She's also not afraid to let some editorial bias slip in. For those inclined to further delving, the bibliography is more than equal to the task. Great illustrations. —Andrea Chase



The History of Hell

Alice K. Turner. 1993; 275 pp.
ISBN 0-15-140934-X

\$29.95 (\$33.45 postpaid) from Harcourt
Brace Trade Dept., 6277 Sea Harbor Drive,
Orlando, FL 32887-4300; 800/543-1918,
fax 800/874-6418



• One effective approach was to change Hell. Horrid as the old Hell was, it had variety, activity, scenery, and a certain entertainment value — too much, in fact, for the Jesuits. It might serve to frighten the uneducated into good behavior, but it was not taken seriously by people who counted. So the Jesuits dispensed with frills. They eliminated all tortures except fire, and all monsters except possibly “the worm that never sleepeth,” though there remained some doubt as to how these two could co-exist (perhaps the worm was a metaphor for a bad conscience). What they added was unnervingly apt for the times — they added urban squalor.

• The late nineteenth century was also seeking to dispense with Hell inside the Christian fold, though not without a fierce struggle. Ever since Origen had first speculated about eventual forgiveness for all, the concept of universal salvation had lurked in the background of Christianity, sternly repudiated by both Protestant and Catholic hierarchies but never entirely vanquished. At the time of the Enlightenment, deviant theories were discussed for the first time in 1,500 years. The Romantic view of God as Love, familiar to us now, but something of a novelty one hundred and fifty years ago, demanded a new look at damnation.

◀ A sixteenth-century mannerist Pan ogles a nymph. Images of Pan and the Devil drew close in the Renaissance.



Holy Soul Jelly Roll: Poems and Songs 1949-1993

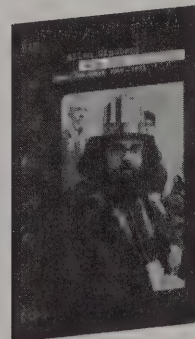
America's most versatile and conscientious record label, Rhino Records, has issued yet another outstanding spoken-word box set, this one focusing on the words and music of Allen Ginsberg. This set contains inspired performances from all of Ginsberg's artistic phases, including his very first public readings of "Howl" and "Kaddish," and traces his gradual transformation into one of the truly great interpretive performers of the written word. From an early powerhouse reading of "Sunflower Sutra" to his later musical collaborations with such luminaries as Dylan, Elvin Jones, and The Clash, Ginsberg tirelessly reflects where America has been — and where it is going. —Tom McIntyre

• "Nurse's Song":

I think mantra chanting deepened my voice until it sank down from throat into heart area. On "Nurse's Song," guided by Jon Sholle, my voice settled into some approximation of the voice I heard in 1948. I guess that in 1948 I experienced an auditory premonition of my own latent physiology. I was never able to figure out whether I was having a religious vision, a hallucinatory experience, or what, but it was the deepest "spiritual" experience I had in my life, & determined my karma as poet. That's the key pivotal turnabout of my own existence. That's why I was hung up on setting Blake to music. Blake was the catalytic poet who turned me on to the idea that poetry could awaken people's consciousness.

• "Pacific High Studio Mantras (OM AH HUM VAJRA GURU PADMA SIDDHI HUM)":

Mantra chanting can be an extension of shaking your ass or raising your voice in joyful exaltation. With no fundamentalist associations, it's sheer joy to sing, a good way to loosen one's heart to the world. The first main mantra I sang in the '60s was "Hare Krishna"; I got really good at that. I exercised such a repertoire of monochordal variations beginning with that one tune that I got invited to sing at Charles Mingus' wedding.



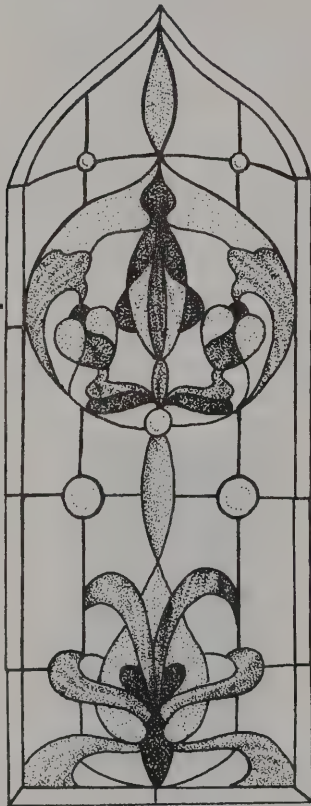
Holy Soul Jelly Roll

(Poems and Songs 1949-1993)
Allen Ginsberg. Rhino World Beat,
4 CD set #R271693
\$49.98 (\$52.98 postpaid) from
Rhino Records, 7930 Alabama Avenue,
Canoga Park, CA 91304; 800/432-0020

The Sex Imperative

This book documents the evolutionary changes in the exchange of chromosomal material between members of the same species. Kenneth Maxwell runs the gamut from lowly single-celled life to the more advanced animals. If you have ever wondered what the evolutionary advantages of sexual reproduction were, *The Sex Imperative* fills in all the gaps, making a clear case for the benefits it bequeaths. —Sharon Hennessey

Sex was invented by microbes, and for whatever reason, the habit caught on. Throughout the evolutionary history of life from microbes to primates, organisms devised many unique, often bizarre, ways of doing it. Some species can reproduce with or without sex, and a relative few eschew the practice altogether managing to reproduce for generation after generation without sex. But most organisms, including all the higher animals, are sexual creatures, unable to reproduce at all without sex.



Healing Environments

(Your Guide to Indoor Well-Being)
 Carol Venolia. 1988; 224 pp.
 ISBN 0-89087-497-2
 \$12.95 (\$15.95 postpaid) from Celestial
 Arts Publishing, PO Box 7123, Berkeley, CA
 94707; 800/841-2665

Japanese scientists made a related discovery in 1959 while working on inherited resistance. They found that dysentery-causing bacteria could pass their genes for resistance to *E.coli*, the common intestinal bacterium, and that *E. coli* in turn could pass the genes to *Salmonella*, still another type of bacteria, a troublesome intestinal pathogen. And in 1970, Robert Ferone and his co-workers, using the antimalarial drug pyrimethamine, were able to show that the malaria parasite *Plasmodium* could transfer drug resistance from one species of the protozoan to another. It is now commonly seen that genetic material is not only transferred readily from resistant to nonresistant strains of microorganisms, but to other species as well. Gonorrhea bacteria that are resistant to penicillin have a gene for producing an enzyme, penicillinase (now call beta-lactamase), that breaks down the antibiotic before it can do its work. B. I. Eisenstein and co-workers at the University of North Carolina School of Medicine performed experiments showing that resistant gonococci can sexually transfer the penicillinase gene to other species of bacteria as well as among themselves.

Why seagulls are gay is a mystery. Scientists cannot tell whether it is a behavioral aberration or has an adaptive purpose. It may be related to the sex ratio of the island population of seagulls. Extra females are allowed to have some promiscuous matings with males so they can pair with

The Sex Imperative

Kenneth Maxwell. 1994;
 300 pp. ISBN 0-306-44649-9
 \$24.95 (\$27.95 postpaid)
 from Plenum Publishing Corp.,
 Order Dept., 233 Spring Street,
 New York, NY 10013; 800/221-9369

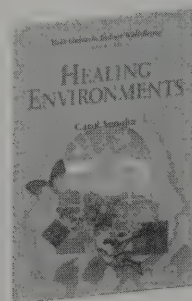
other females for nesting and hatch young from a few fertile eggs, whereas without any mate at all, they would not be able to incubate the eggs or raise chicks. This would appear to have the purpose of making it possible for an excess of females to reproduce. Actually, they suffer a reduced nutritional capacity because of the lack of courtship-feeding by the male. Eggs laid by homosexual females are smaller than those laid by heterosexual females, and the chicks that hatch from them are less apt to survive.

The behavior of the gulls may be a result of chemical contamination affecting their endocrine (hormone) systems. Contamination of the food chain by DDT and PCB's (polychlorinated biphenyls) is known to upset the steroid hormone balance in sea birds to the point of causing lethal thinning of eggshells. But there has been little or no study of whether the same or similar hormone changes are related to the apparently new pattern of sexual behavior.

Healing Environments

The places and spaces in which we live and work have a profound effect upon our physical, emotional and spiritual health and well-being. Carol Venolia reveals the factors that create harmony and health within the daily environment, as well as those that have the potential for negative reactions. She provides practical ideas for building or remodeling living areas. You can create a place of empowerment and healing that is suited to your particular needs.

—Evalyn Moore



Many of us consciously pursue good health, but we often overlook the powerful role of our immediate physical environment. Each of us has a close, evolving relationship with the places where we live, work and otherwise spend our time. We interact with our surroundings through all of our senses. We make changes in our environment, and in turn, influence our lives. Places limit us, challenge us, expand us, support us, bore us, and excite us. Every aspect of these interactions becomes a part of our total well-being, often in subtle, unexamined ways.

When we bring our environments into greater harmony with life, we set healing forces in motion that carry into every part of our lives . . . not only is it important that we find or make places that are healing to us, but it matters that we be healers of places as well.

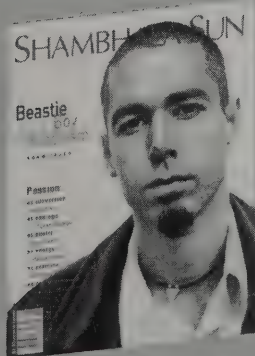
Shambhala Sun

Founded by Chogyam Trungpa Rinpoche, and put together by the Buddhist communities in Boulder, Colorado and Halifax, Nova Scotia, this journal looks in both a practical and contemplative way at Buddhist practice and at "creating an enlightened society." It includes poetry, criticism, biography, interviews, recipes, and meditative instruction by such heroes as the Dalai Lama, Allen Ginsberg, and Beastie Boy Adam Yauch. —Jim Thomas

Cindy Bisailon: There is a passage in the Book of Revelation where an angel proclaims that there will be time no longer. I wonder how you respond to the idea of time, from your Zen point of view perhaps, whether there is a way to escape from time.

Leonard Cohen: Well, it's a very bad idea to try to escape from time, because you'll be late for all your appointments and you won't be able to get your kids to school on time. Of course we have a dream and an appetite to dissolve time and not feel it rushing at us, or catching up on us. So it's important to be able to experience both the absolute crushing urgency of time and to be able to dissolve it. Almost all the religions I know about provide the technology for experiencing this great affair without the conditioning factor of time. But you can't live in that world either.

The Book of Revelation certainly does fulfill that great characteristic of charged writing by pulling the rug out from under you. You are in a new world and there is a New Jerusalem, and you are ready to embrace the notion of newness and of rebirth and a new cosmos. It's a kind of religious or meditation manual, and it invites you to unfold that dissolving of time in your own heart and in your own life.



Shambhala Sun
Melvin McLeod, Editor
\$20/year (6 issues) from
1345 Spruce Street,
Boulder, CO 80302-4886;
800/331-7751



Maura O'Halloran with Go Roshi in April, 1982, on the occasion of her formal recognition as a Zen teacher.

CB: "Dance Me To The End of Love" implies the dissolving of time in the moment of sexual ecstasy. To what extent do you make a distinction between the sexual and the spiritual when it comes to absolute?

LC: In the sweaty, passionate, filthy embrace, in all of its delicious and time-dissolving power, in the midst of that embrace there is no difference, no separation between the spiritual and the profane. But it's reached through the profane rather than

through the spiritual, at least in my canon. That is the portal, that is the door into the whole affair. In that moment there is not separation, there is no spirit and flesh, there's no conflict, there never was. It's dissolved.

Essential Zen

A little Zen goes a long way. This collection leapfrogs from early Chinese patriarchs (and a few matriarchs), to pioneers like Nyogen Senzaki and Soen Nakagawa, to homegrown teachers, Zen center monks, and wandering poets — Robert Aitken, Charlotte Joko Beck, Zen cook Ed Brown, Philip Whalen.

Taken together, these ancient and modern poems, stories and encounters prove Zen's tough, resilient, weedy continuity through cultures and epochs: China, Korea, Vietnam, Japan, North America. Editors Kazuaki Tanahashi and Tensho David Schneider include a fair sampling of classics (many freshly retranslated) but for the most part, as they say, "we put in what we like." The result, happily, is not so much an essential Zen (rather a redundancy of a title anyway) but a living, breathing, questioning, laughing Zen — that may inspire you to hit the zafu, once again, or take up the brush and try a little haiku yourself. For instance:

*Spring rains
Out of the vacant lot
Weeds pop up!*

—Rick Fields

■ Seung Sahn would say, "When you eat, just eat. When you read the newspaper, just read the newspaper. Don't do anything other than what you are doing."

One day a student saw him reading the

Essential Zen

Kazuaki Tanahashi & Tensho David Schneider. HarperSanFrancisco, 1994; 174 pp. ISBN 0-06-251046-0 \$9 (\$11.75 postpaid) from HarperCollins Publishers, Direct Mail, PO Box 588, Dunmore, PA 18512; 800/331-3761

newspaper while he was eating. The student asked if this did not contradict his teaching. Seung Sahn said, "When you eat and read the newspaper, just eat and read the newspaper."

● Thich Nhat Hanh said at Plum Village in France, "There are enough Zen centers. We need more Zen corners."

● Birth, old age, Sickness, and death: From the beginning, This is the way Things have always been. Any thought Of release from this life Will wrap you only more tightly In its snares. The sleeping person Looks for a Buddha, The troubled person Turns toward meditation. But the one who knows That there's nothing to seek Knows too that there's nothing to say. She keeps her mouth closed.

—Ngoc Kieu

Jack Kerouac wrote with exquisite romantic mindfulness and panoramic searching memory. But timid 1950s publishers didn't know what to make of his "spontaneous prose." Kerouac's most famous book, *On the Road*, wasn't published until 1957, six years after its writing. Immediately, however, there was great national fascination and fearfulness as Kerouac was idealized and stereotyped as the quintessential "beatnik" figure. Now, long after Kerouac's death, some of his excellent but less-known work has at last been reprinted or anthologized. —Hacsi Horvath

Tristessa

Each book by Jack Kerouac is unique, a telepathic diamond. With prose set in the middle of his mind, he reveals consciousness itself in all its syntactic elaboration, detailing the luminous emptiness of his own paranoid confusion. Such rich natural writing is nonpareil in later half XX century, a synthesis of Proust, Céline, Thomas Wolfe, Hemingway, Genet, Thelonus Monk, Basho, Charlie Parker, and Kerouac's own athletic sacred insight.

This entire short novel *Tristessa's* a narrative meditation studying a hen, a rooster, a dove, a cat, a chihuahua dog, family meat, and a ravishing, ravished junky lady, first in their crowded bedroom, then out to drunken streets, taco stands, & pads at dawn in Mexico City slums. —Allen Ginsberg

- The little kitty is mewing rapidly for meat — himself a little piece of quivering meat — soul eats soul in the general emptiness.

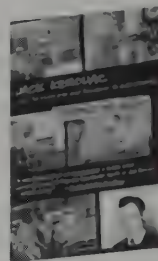
Tristessa

Jack Kerouac. Penguin Books, 1992; 96 pp. ISBN 0-14-016811-7 \$9 (\$11 postpaid)



Visions of Cody

This work is a wild and experimental character study of Neal Cassady, Kerouac's great friend and hero of *On the Road*. It's sweet, cinematic, beatific, humane, and crazy. I've rarely been as moved. —HH



Visions of Cody

Jack Kerouac. Penguin Books, 1972; 430 pp. ISBN 0-14-017907-0 \$12.95 (\$14.95 postpaid)

- He looked alright but strange. So awed by these new clothes that he could hardly turn his head when Watson talked to him, but only nodded up and down, his long hair bushy and uncombable, his thoughts all pompous sweaty astonishment like the cartoon characters they draw with bewildered perspirations raining from their heads, just as ludicrous as that, and yet as that bright

The Portable Jack Kerouac

As natural an idea as a one-volume Kerouac anthology would seem to be, it was never possible to make one until now. Kerouac's fifteen books had at least nine different publishers, some of whom obdurately refused to grant permissions. But circumstances have shifted enough that longtime Kerouac scholar and biographer Ann Charters was able to put together a very fine Kerouac reader. Beyond my pleasure at its existence, I love this book for the breadth of its selection, including rare essays and poems, and good excerpts from ten or so of Kerouac's novels. —HH

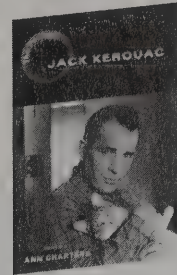
• "Belief & Technique for Modern Prose"

List of Essentials

1. Scribbled secret notebooks, and wild typewritten pages, for yr own joy
2. Submissive to everything, open, listening
3. Try never to get drunk outside yr own house
4. Be in love with yr life
5. Something that you feel will find its own form
6. Be crazy dumsaint of the mind
7. Blow as deep as you want to blow
8. Write what you want bottomless from bottom of the mind
9. The unspeakable visions of the individual
10. No time for poetry but exactly what is
11. Visionary tics shivering in the chest
12. In tranced fixation dreaming upon object before you
13. Remove literary, grammatical and syntactical inhibition
14. Like Proust be an old teahead of time
15. Telling the true story of the world in interior monolog

afternoon that had shed its radiance unasked for so long now showed itself to be turned into old red afternoon when they stepped forth from the house, and piteous remorse among men, birds, and trees that had transpired while they were dressing still haunted the air with that hung silence that makes people ask themselves sadly "Oh what happened to the afternoon?" and later when the general autumn dying quietly like a brave soldier overwhelms them, "Oh what happened to the year?", Cody, very like an Episcopalian farmer boy going to church the Sunday morning before his wedding and with the same absent-minded ignorance of the wide surroundment brooding over him that characterizes all mortal persecuted breath beneath this hugeness, literally had to be led stupidly and stiffly down the street by Watson as they hurried back to the pool parlor to meet the entire gang.

16. The jewel center of interest is the eye within the eye
17. Write in recollection and amazement for yourself
18. Work from pithy middle eye out, swimming in language sea
19. Accept loss forever
20. Believe in the holy contour of life
21. Struggle to sketch the flow that already exists intact in your mind
22. Dont think of words when you stop but to see picture better
23. Keep track of every day the date emblazoned in yr morning
24. No fear or shame in the dignity of yr experience, language & knowledge
25. Write for the world to read and see yr exact pictures of it
26. Bookmovie is the movie in words, the visual American form
27. In praise of Character in the Bleak inhuman Loneliness
28. Composing wild, undisciplined, pure,



The Portable Jack Kerouac

Ann Charters, Editor. Viking, 1995; 612 pp. ISBN 0-670-84957-X \$27.95 (\$29.95 postpaid)

- coming in from under, crazier the better
29. You're a Genius all the time
 30. Writer-Director of Earthly movies Sponsored & Angeled in Heaven

Selected Letters 1940–1956

Until this collection, Kerouac's letters had never been published. We're lucky that he was so meticulous about keeping them in good order, even making carbons of letters sent to such friends as Neal Cassady, Allen Ginsberg, and William Burroughs. Many of these friends and the adventures Kerouac relates in his letters also appear in his books. How strange and sad it feels to read through the correspondence of a man's life: precocious teenage football player, intellectual merchant mariner, deep-souled aspiring Wolfean novelist, lonesome traveler, devoted amigo, frustrated literary groundbreaker, bodhisattva, hero on the Verge. But it's sure the changes and follies of a legend's life, as real as it gets. —HH



Jack Kerouac: Selected Letters, 1940–1956

Ann Charters, Editor. Viking, 1995; 609 pp. ISBN 0-670-84957-X \$27.95 (\$29.95 postpaid)

• To John Clellon Holmes

[May 27, 1956
Mill Valley, Calif.]

Sunday—
the sky is blue,
The flowers are red

Sunday in my cabin . . . Dear John . . . lying around reading haikus and then rushing up to take sponge bath naked in sunny isolated yard, seen only by deer if they look, or by white horse who looks green in the shade, or by hummingbird that happy California humming guy, or by the rat in my cellar who squeaked musically last night when he thought I was asleep. Spent long pleasant night sleeping under the bright moon, in windless perfect warmth, on my bed of straw between the rosebush and the meadowslope, thinking of "Why?" . . . I marvel at the calm of the Japanese haiku poets who just enjoy the passage of the days and live in what they call "Do-Nothing-Huts" and are sad, then gay, then sad, then gay, like sparrows and burros and nervous American writers.

All from Penguin USA, Consumer Sales,
120 Woodbine Street, Bergenfield, NJ 07621;
800/253-6476



On the Millennium Road

BY
HOWARD
RHEINGOLD

ILLUSTRATION AND SHOES
BY HOWARD RHEINGOLD
AND ILLUSTRATIONS
BY WINSLOW COLWELL

TWO HUNDRED AND FIFT



Howard Rheingold is the editor-in-chief of The Millennium Whole Earth Catalog, and a former editor of WER. Check out his pages on the World Wide Web: <http://www.well.com/www/hlr/>
—RK



Characters

NOVEMBER, 1994, WAS THE MONTH in which Harper San Francisco, publishers of *The Millennium Whole Earth Catalog*, rode me hard and put me away wet. For six weeks — between the last week of October and the first week of December — I made promotional appearances in Boulder, Denver, Fort Collins, New York City, Minneapolis, Chicago, Milwaukee, San Diego, Los Angeles, Boston, New York City (again), Washington, DC, Eugene, Portland, Seattle, and Vancouver, living according to a minute-by-minute itinerary that was faxed to me on the road. By the end of the tour, I was on page sixty-five of the itinerary. During deadline summer, the *Catalog* staff at Gate Five Road had worked weekend



ARS AGO, a band of subversives conspired to infect Europe and America with a radical idea: If populations of ordinary people could learn to read and write, and win the freedom to communicate with each other, they could become citizens of free nations, capable of governing themselves. The Constitution of the United States of America was one of the products of this conspiracy, known to history as "the enlightenment project."

That's my interpretation of the mystical eye in the pyramid on the back of the dollar bill. The *novus ordo seclorum*, the "new order of the ages," consists of ordinary people using the tools of knowledge, to take control of their own destiny.

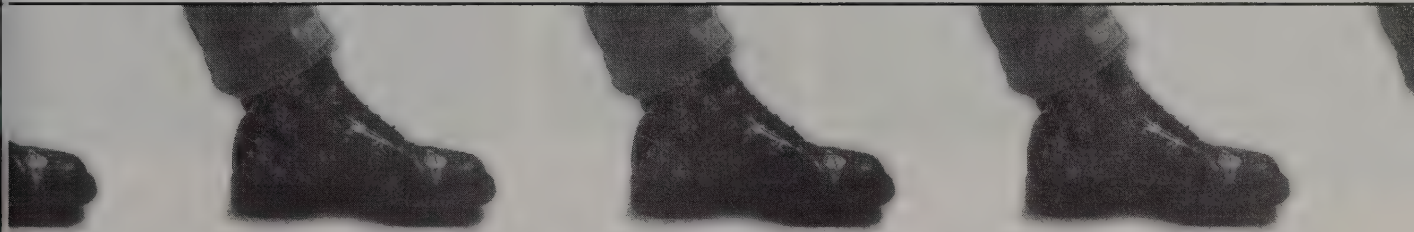
In the foreword to *The Millennium Whole Earth Catalog*, Stewart Brand revealed that the spiritual ancestors of the first *Whole Earth Catalog* stretched back a lot further than Bucky Fuller when he pointed to the *Catalog's* roots in Diderot's *Encyclopedie*. Diderot and his network of knowledge-gatherers knew that the most subversive thing you could do in the eighteenth century would be to gather the secrets of the

guilds — how to pile together enough bricks so that a large building won't fall down, how to assemble a printing press, how to make paper and black powder — and make that secret knowledge available to the citizens.

The original *Encyclopedie* was an instrument of subversion, as was the first WEC.

The words above begin the story that emerged from the publicity tour I undertook on behalf of *The Millennium Whole Earth Catalog* (known to those of us who talk about it a few dozen times a day as "MWEC" — *Emweck*). The story of the eighteenth-century subversives is what I tell people first. Then I fast-forward to 1968.

I was twenty-one, just graduated from Reed. That was a hell of a year for a young man to try to make meaningful choices about a path in life. The first Whole Earth Catalog came out at that time and introduced me to a moral compass in a period when all the moral navigation instruments had been thrown out the windows. Do you want to build a new life, independent of all the old toxic bullshit? Here are the tools: go do it! Don't take our word for it — think for yourself!



on the Millennium Road

after weekend, night after night, racing to meet our July deadline, while I took off to the beach with my daughter, returned home in time to take my shoes off and walk on my lawn before sunset. November was payback time.

I met a lot of the old stalwarts: the *CoEv Quarterly* tribe: our loyalists. There was always a sprinkling of people who weren't familiar with previous *Whole Earth Catalogs*, but had gotten the message that something unusual was going on. The audiences usually included a few people who were yet to be born when the first WEC was published.

The tour started out in the San Francisco Bay area. That meant I

could count on larger-than-usual crowds at the bookstores, and it meant I could sleep in my own bed at night. It also meant that I had to stand up and face crowds of people who expected me to tell them a story that I had only begun to compose. At that point, I knew what the MWEC was, and I had some things I wanted to talk about, but I didn't know yet what narrative could glue it all together and hold people's attention. It took a few stand-ups for me to catch enough feedback to get a feeling for the story of the *Whole Earth Catalog*.

My third bookstore appearance was at Cody's, in Berkeley. Cody's is a wonderful bookstore, but Telegraph

Avenue is a behavioral sink. Berkeley audiences are notorious for persistent, noisy political intransigence — fine with me. But people wander in who aren't in remotely the same frame of mind as the rest of the audience. This time a fellow in the back row spoke up in the middle of my second or third sentence.

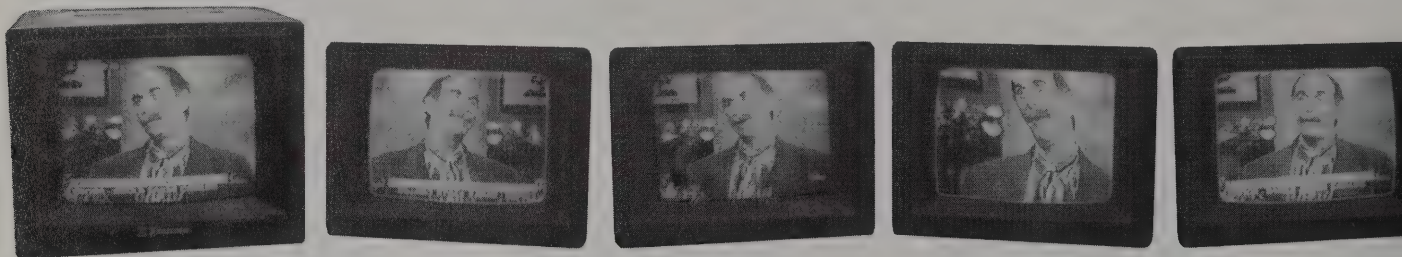
"Don't you know about the Federal agents in the wilderness and the secret camps they have been building?"

"Yes. I am certain that there are a great many well-armed but not well-intentioned people running around the back country," I interjected, as soon as possible, with great sincerity. I didn't think. I just let the words find themselves: "And not all of

Then I tell the story of how *MWEC* came to be, how the board of directors hired independent accountants to prove to us how swiftly we were heading for bankruptcy. Yes, we could accept the money from the publisher and run out like starry-eyed lunatics and buy computers and hire people and create a book that would cost twice as much as we had been given to do it. But that would be the height of irresponsibility. (Audiences love this part.) And now we can see that the accountants were right. We spent all the money our publisher paid us, and much more, but our mission has been fulfilled: another *Whole Earth Catalog* is in the world! One that isn't just kidding about equipping us for the millennium. It's more than a book. It's the bell that calls the wits together, the clarion that sets the armies to marching — the seedsavers and ecosystem-rebuilders, the cyberneticians and the zinesters, the activists and educators and philosophers

and funsters that are going to steer the whole wild wacky hell-in-a-handbasket planet right straight through trouble city to some kind of sustainable, humane way to live through this civilization we've created. Some way to preserve our liberties, our humor, our wetlands.

By the time any author finishes a publicity tour, he or she has constructed a story about the book. After a dozen cities, fifty or sixty radio stations, a dozen television stations, four score newspaper reporters, twenty or thirty bookstores, it's natural that a story emerges. At the same time the story of *MWEC* was emerging, America seemed to be going through one of those convulsive changes it has experienced at regular intervals throughout my own life: I was on the road before, during, and after the November elections of 1994. I talked with a lot of Americans in different places. In cabs and restaurants, lobbies and bars, and bookstores. It was during that time that



them are Federal agents. But if you want to find out how a real investigative reporter would dig out the story, *MWEC* can point you to the tools. And if you want to get the story out, here's how you can print and bind and distribute your own book, or start a computer bulletin board system, or build a radio transmitter."

After a couple dozen appearances, I was beginning to develop *schtick* in reply to frequently asked questions. People want to know why the *Whole Earth Catalog* still retains its currency "long after hippies became stockbrokers." "It's not about hippies," I found myself saying after a while, "It's about people who think for themselves." That's where Diderot and Ralph Waldo Emerson, Steve Wozniak and the Republican duck hunters enter the story. It's an op-

portunity to crack open the shells of misbelief that can accrete around history when the media masticate it too much. "It's just that the hippies were the people who were most visibly willing to think for themselves back then."

The popular question, "Don't you think it's alienating to think of a future where everyone sits in their cubicles and communicates with each other through computers?" is my cue to start looking at the *Whole Systems* aspects of alienation. "Computers didn't make us this way," I begin. "Computers found us this way. If you want to start blaming technologies for the state of our alienated society, you have to include air conditioning. When most Americans sat out on the porch during the heat of summer, they sometimes talked with each other. And the street was a

public place that people cared about. We lost a little bit of community when we embraced the benefits of air conditioning." I'd mention that elevators make it possible for fifty thousand people to work in the Empire State Building every day: "How can you have a community with fifty thousand people in the same building?"

"A majority of the population lives in concrete cubicles and watches an electronic box that tells them what to buy, what to believe, and who to vote for. Now that we have the opportunity to reach through the electronic box's screen to make contact with other human beings, we need to return to the notion of appropriate technology. What is a tool good for? What kinds of tasks should a tool not be used for? How does using a tool change our lives in

Newt Gingrich started talking ominously about taking care of the "counterculture" that has been leading this country to moral ruination.

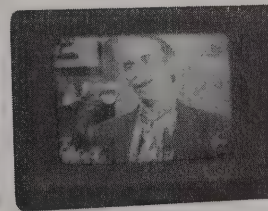
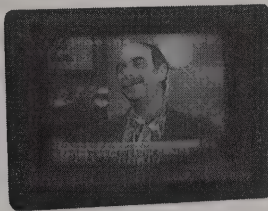
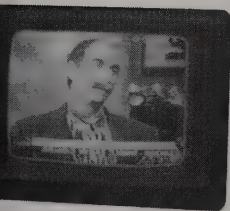
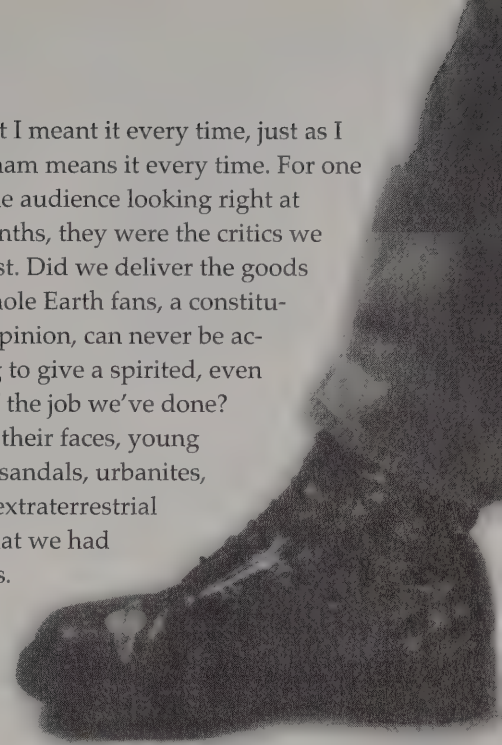
The "counterculture" question kept coming up. "What do you think 'counterculture' means?" reporters kept asking me.

"It means thinking for yourself" is what I told them. Which would get me into the pitch: "*The Millennium Whole Earth Catalog* is for people who aren't afraid to think for themselves, who want to build independent lives with some kind of meaning according to their own lights, and who don't mind doing something for their neighbors, community, and planet."

Can you picture me in a fine paisley frenzy, holding one of those big white floppy MWECs in the crook of one arm, just a thumpin and a whumpin on the book with the palm of my other hand, Billy Graham style? Sure, I repeated the same stories, more or less,

in fifteen cities. But I meant it every time, just as I imagine Billy Graham means it every time. For one thing, there was the audience looking right at me. For fifteen months, they were the critics we worried about most. Did we deliver the goods to the old-time Whole Earth fans, a constituency who, in my opinion, can never be accused of hesitating to give a spirited, even furious, critique of the job we've done? From the looks on their faces, young and old, suits and sandals, urbanites, ex-urbanites, and extraterrestrial alike, I could tell that we had delivered the goods.

The millennium road was an exercise in whole earthropology I'll never forget. 🐾



unexpected, unpleasant ways? What kind of political power shift does a tool cause? Access to tools and ideas is no longer sufficient. Now we need new ideas about how to use tools."

The Cooper-Hewitt museum in Manhattan was the toniest venue for the MWEC road show. J. Baldwin, Tano Maida, and I had spoken that morning at the Cooper Union downtown, as part of Cooper-Hewitt's day of presentations on the theme of "ecological design." The evening event at the very uptown marble building at 91st and 5th Avenue was the kind of good-cause gathering where people in evening wear stop in after cocktails and before dinner. Tonight, the good cause was MWEC, and I guess it struck some kind of chord: several hundred people showed up for the invitation-only event. Some of those well-dressed

people revealed themselves to be MWEC-carrying Old Hippies. Ecologists, cyberspacers, old Bohemians, young Postmoderns, lovely society ladies, and the avant-garde German caterer mingled and dispersed, leaving me with the conviction that you can't tell Whole Earthers by their costumes.

Along Millennium Road, I ran into people I knew very well but whom I had never seen before: members of The Well — the computer-mediated community I've participated in for the past ten years. Wellites I didn't know on sight loved to come to the talks and ask provocative questions. They showed up in Fort Collins, Minneapolis, Milwaukee, and Chicago. The local Well bunch threw dinners or brunches for me in Boulder, Boston, and New York. After a couple of

weeks of hotel rooms and friendly strangers, meeting fellow communitarians in unfamiliar cities does take the edge off homesickness.

Sometimes five people show up at a bookstore, like in Fort Collins, and sometimes one hundred show up, like in Boulder. Sometimes it's mostly hippies, like the crowd at the Booksmith on Haight Street in San Francisco, and sometimes it's an uptown crowd, as at Cooper-Hewitt. You get entirely different tribes in Del Mar, California, Deerfield, Illinois, and the Upper West Side. Whole Earth readers weren't afraid to think for themselves, loudly (though rarely rudely), during these appearances. But when you stand up and talk on behalf of a publication that encourages people to question authority, you have to expect some challenges. 🐾

TWO DOZEN WINNING MAXIMS

by George Leonard

1.

Winning isn't everything.
In fact, it's no big deal.

2.

Prepare for the contest by practicing
in a way that closely resembles
the conditions of the contest.

3.

Come to the contest balanced and centered.

4.

Take ownership of the field of play.

5.

Understand the overarching importance of
posture and presence, whether the
game is physical or mental.

6.

Put as much care and consciousness into the
easy plays as the difficult ones
— even while practicing,
even while just messing around.

7.

Welcome your opponent.
Honor your opponent. Cherish your opponent.
Be honestly and openly
glad to see your opponent.
"From a worthy opponent boundless
courage flows into you." (Kafka)

8.

Don't try to control your opponent.
Control time and space instead.

9.

Stay one second ahead of your opponent
in time, one step in space.

10.

Reorient yourself quickly
— more quickly than your opponent
— after every turn in the contest.

11.

Don't give your power to the problem.
Empower yourself.

12.

Energy follows attention.
Attend to your own center. Extend through
your opponent to a point in infinity.

13.

In a physical contest, lead your
opponent's mind; the body will follow.
In a mental contest, lead your opponent's
body; the mind will follow.

14.

Stay centered.

15.

If the contest isn't going well,
change the context.

16.

Learn to take any misfortune in
the contest as a gift.

17.

Always assume you'll win.

18.

If you should happen to lose, take it as an
unusual, rather bizarre event, which is unlikely
to happen again.

19.

Whether you win or lose, be gracious.
Be gracious always.

20.

Learn from every loss. Cherish a
really great game, no matter who wins.

21.

Whatever it takes,
get into the habit of winning.

22.

Don't even *think* about cheating.

23.

Remember, winning is just as easy as losing,
maybe easier. And it's a lot more fun.

24.

Practice, practice, practice.

The Awakened Warrior

Being a warrior ain't a walk in the park. The world seems full of reasons not to remember ourselves as strong and whole. But this is what's called for: to take up the challenge with courage, compassion, discipline, intelligence, and humor. By facing life committedly, authentically, without reassuring fluff, one grows strong-hearted and deeply truthful.

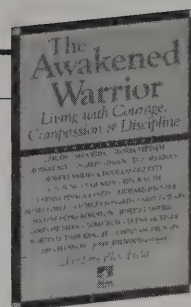
Rick Fields was the *Whole Earth Catalog's* first "religion" editor, and has written several fine books on Buddhism. In *The Awakened Warrior*, he's compiled dozens of useful essays and interviews that give the word on what it means to be a warrior. —Hacsi Horvath

By warriorship we are not particularly talking about the skills necessary to wage war in the conventional sense. We are not talking about learning to handle lethal weapons and crank up our aggression and territoriality so that we can burst forth and conquer all our enemies. Warriorship here refers to realizing the power, dignity, and wakefulness that is inherent in all of us as human beings. It is awakening our basic human confidence, which allows us to cheer up,

develop a sense of vision and succeed in what we are doing.

Because warriorship is innate in human beings, the way to become a warrior — or the warrior's path — is to see who and what we are as human beings and to cultivate that. If we look at ourselves directly, without hesitation or embarrassment, we find that we have a lot of strength and a lot of resources available constantly. From that point of view, if we feel we are without resources, if we feel incompetent or as if we were running out of ideas, it is said that we are being attacked by the enemy of warriorship: our own cowardice. The idea of warriorship is that because of our human potential we can go beyond that, step over the enemy of cowardly mind and discover further banks of resources and inspiration within ourselves.

Cowardly mind is based on the fear of death. Ordinarily we try to ward off any reminders that we are going to die. We constantly produce artificial environments to shield ourselves from any harsh edges. We weave ourselves warm cocoons in which we can live and feel comfortable and sleepy all the time. We try to keep everything under control so that nothing unexpected will pop up and give us a nasty shock, reminding



The Awakened Warrior
(Living with Courage, Compassion & Discipline)
Rick Fields, Editor. Jeremy P. Tarcher Inc.,
1994; 267 pp. ISBN 0-87477-775-5
\$13.95 (\$18.20 postpaid) from Putnam
Publishing Group, Order Dept., PO Box 506,
East Rutherford, NJ 07073; 800/788-6262

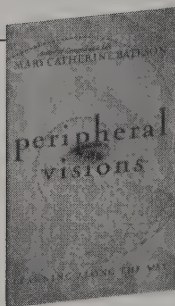
us of our impermanence, our mortality. By doing this we are trying to defend ourselves from death, which we could say is the opposite of celebrating life. By maintaining our defensive attitude, we keep ourselves surrounded by a familiar fog. We wind up breeding depression and general unhappiness. In fact, that unceasing atmosphere of depression is what makes our little created environments feel so familiar and nestlike. But because it is based on struggle, this cowardly approach of ours is very far from the sense of real joy and playfulness that is associated with warriorship.

Peripheral Visions

We find ourselves, in our culturally diverse communities, needing to act and interact with others without complete understanding. When our instructions are simply "when you get to the crossing, look for signs," the crucial task becomes learning along the way — learning as empathy, as a form of spirituality, as an improvisational art form.

Perception, attention, and grace are the tools with which one "constructs both self and world, and learns patterns for joining in the dance." With warmth and brilliance, Mary Catherine Bateson presents a vision of learning as both an end in itself, and an activity that can, on a grand scale, nourish ourselves and our world. —Lisa Winer

What does it take to notice when the peepers or the bullfrogs aren't as loud this year as they were a year ago, as Rachel Carson did with birdsong? We have a name that we use for noticing without being sure of the exact cues, the details that might be offered as evidence. We tend to call that intuition. Most of what is called intuition has to do with information processed subliminally, unconsciously. "Mere" intuition it is not very respectable, like "mere" metaphor. Yet even though the boundaries of analysis will be pushed ever further, it



Peripheral Visions (Learning Along the Way)

Mary Catherine Bateson. 1994; 243 pp.
ISBN 0-06-016859-5
\$23 (\$25.75 postpaid) from HarperCollins Publishers,
Direct Mail, PO Box 588, Dunmore, PA 18512;
800/331-3761

is a mistake to discard the hints and suspicions that are not accounted for by a given paradigm.

All thought relies on metaphor, on ways of noticing similarity so that what has been learned in one situation can be transferred to another. Scientists try to purge metaphor and intuition from their publications, but freed from the formal constraints of scientific publishing, the speech of scientists is like all human speech and thought, full of metaphors, often unconscious and unexamined.

The solution is not to purge metaphors from speech and try to ignore them; the solution is to take responsibility for the choice of metaphors, to savor them and ponder their suggestions, above all to live with many and take no one metaphor as absolute. There are truths to be discovered in equating one's mother with a toad; there are truths to be discovered in looking at a butchered sheep and recognizing heart and

lungs and death itself as common. We have work to do to make empathy an acceptable form of learning and knowing for people who are not poets and therapists. We have to make it possible for manufacturers and politicians to admit empathy as a legitimate, conscious discipline, thoughtful empathy as a form of knowing, leading to effective action.

Ambiguity is the warp of life, not something to be eliminated. Learning to savor the vertigo of doing without answers or making shift and making do with fragmentary ones opens up the pleasures of recognizing and playing with pattern, finding coherence within complexity, sharing within multiplicity. Improvisation and new learning are not private processes; they are shared with others at every age. The multiple layers of attention involved cannot safely be brushed aside or subordinated to the completion of tasks. We are called to join in a dance whose steps must be learned along the way, so it is important to attend and respond. Even in uncertainty, we are responsible for our steps.

by James Donnelly

Celtic music with staying power

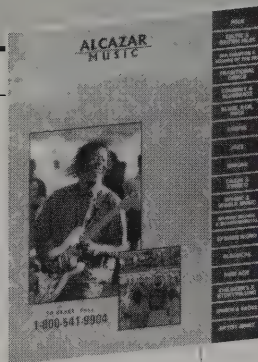
I hope nobody expects to find out the latest hot disk from reading this. Several of the albums reviewed here are old enough to vote. New Celtic music keeps coming out at flood spate, and in such diverse permutations, interpretations, and degradations that you have to just smile, if not burst out laughing. So I have missed lots of swell music here; to get and keep a grip on that which is current, you need to subscribe to the excellent folkie magazine *Dirty Linen* (WER 67:93; see also MWEC pp. 275-276) and to get on some music distributors' catalog mailing lists.

A good one of these is:

Alcazar Music

The Alcazar catalog is huge. They sell recorded music (of course), spoken-word and nature recordings, videos, and books. Music listings are categorized by genre and cross-indexed half to death — music by Richard Thompson, for instance, may be found on pp. 7, 26, 28, 56, 62, 116, and 177. Each category is introduced by a few brief reviews and staff recommendations.

Alcazar let us have review copies of some of the albums I've reviewed. They are not the only place you can get these albums by any means, but they are an eminently reasonable option.



Alcazar Music
Catalog \$3; see
box for address.

Open House • If The Cap Fits

Twenty-five or so years ago, Arlo Guthrie started out an album with a couple of tunes played by the fiddler Kevin Burke. The fiddle solos segued seamlessly from purely Irish to bluegrass — and why not, there never was much of a seam — as Guthrie's band swung in behind Burke to complete the job of knocking my juvenile socks off.

Look at the high spots in recorded music of the Irish Revival and you'll see Kevin Burke: with the Bothy Band, with Planxty, with Patrick Street. At the same time that he was dragooning his listeners into a resurrected delight in the unprocessed, indilute Irish vernacular, he was tending to fall occasionally into an American idiom — like on the Arlo Guthrie album, or in Patrick Street's "Benton's Jig/Benton's Dream."

Burke lives in Oregon now, and on *Open House* he is fiddling with three Americans (Mark Graham, harmonica and clarinet; Paul Kotapish, guitar, cittern,

and mandolin; Sandy Silva, wonderful noisy dancing). They play as a band, not as Kevin Burke with accompanists; their attitude feels very American and there must certainly be some magpie influence in their acquisition of beats and licks. *Open House* is a faceful o' fun.

The 1973 *If The Cap Fits* has a singularly high perfection quotient and a mystifying capacity for seeming new through the hundreds of times I have listened to it. It is so long in the tooth I am a little embarrassed

to mention it, but it would be evil not to do so. Other steadfasts — Jackie Daly, Donal Lunny, Michael O'Domhnaill — are there in support, but it is Kevin Burke's album, and brilliant.

Open House

Kevin Burke. Green Linnet Records; SIF 1122, cassette or CD from Alcazar

If the Cap Fits

Kevin Burke. Green Linnet Records; SIF 3009, cassette or CD from Alcazar



Makin' The Rounds

Some people, astonishingly, don't have a favorite accordion player. If you're among these, you need only remember Billy McComiskey's name so you don't look dumb in case you're asked. Blathering about an "American sensibility" obliges me to mention *Makin' The Rounds*, although it is over a dozen years old. McComiskey throws Brooklyn push and pull and humor at the traditional and original music he plays, spraying brilliant ornaments with perfectly controlled profligacy.

Jimmy Keane of Chicago is another awesome accordionist. He doesn't

Lead The Knave

It seems as if Arty McGlynn is to be found playing guitar behind just about every other Irish musician who can get him. He is a surpassingly deft and attentive accompanist who can make anybody sound good and the good sound swell, without leaving much of a personal mark — as a session man, he keeps a tight rein on his style.

Turned loose to do an album of his own — actually, to share a CD with the fiddle fiend Nollaig Casey and Donal Lunny (another ubiquitous accompanist, mixer, and producer) — McGlynn rips into some stuttering, acerbic, ear-cleansingly electric versions of old reels and jigs on a Telecaster. My first impulse was to laugh — it's hard not to conjure Duane Eddy — but the stuff has rapidly grown on me. Who doesn't like Duane Eddy, after all?

Alcazar Music

PO Box 429, Waterbury, VT 05676-0429; 800/541-9904. Cassettes \$9.98 each, CDs \$15.98 each. Shipping charges: \$3.50 on orders up to \$24.99, \$4.50 up to \$50, \$5.25 up to \$75.

Elderly Recordings

PO Box 14210, Lansing, MI 48901; 517/372-7890, fax 517/372-5155. Shipping charges: \$4.25 on orders up to \$20, \$4.75 up to \$50.

Dirty Linen

\$20/year (6 issues) from PO Box 66600, Baltimore, MD 21239; phone 410/583-7973, fax 410/337-6735



Poirt An Phiobaire • Dublin'

Paddy Keenan played the Uilleann pipes with the Bothy Band, back in the early to mid-seventies. These two albums are almost but not quite that old — I have an unhappy suspicion they may soon be unfindable. **Poirt An Phiobaire** is Keenan's interpolations of traditional music, including some Breton pieces, and original tunes; he is backed by Arty McGlynn on guitar. **Dublin'** is Paddy Keenan and Paddy Glackin playing hardcore pipe-&-fiddle duets — a lot more traditional (with a lot more of the Seamus Ennis sound) with a lot less interpolation. The former is relatively relaxing and the latter is relatively compelling; both are mighty fine. "The Sporting Pitchfork" is a real song, and it's on **Dublin'**.

Poirt An Phiobaire

Paddy Keenan. GAEL 099, CD only.

\$13.95 from Elderly

Dublin'

Paddy Keenan and Paddy Glackin.

Tara 2007, cassette only. \$10.98 from Alcazar

Mirror Blue • Strict Tempo!

He surely is not a "Celtic musician," but he draws frequently, heavily, and masterfully upon the keystones of Celtic music, and he is as much musician as anybody could want or stand. I am talking about Richard Thompson. His 1994 **Mirror Blue** may now have become the best known of Thompson's works — rightly so and about time. The music on **Mirror Blue** resists classification to the last note. It is largely played on electric instruments (leaving aside a few prominent exceptions like border pipes, bombardas, bass concertinas) and in some places it superficially resembles rock'n'roll . . . to about the same degree that, say, Tom Waits's music does. The impossibility of assigning **Mirror Blue** to a genre may be why you can't get this album from Alcazar.

Not to call **Mirror Blue** a "commercial" effort, still **Strict Tempo!** has to be put at the far end of the saleability continuum. In 1981, bereft of a label, Thompson used an eight-track mixer to record a dozen songs, some of them well-known traditionals and some unearthed from god knows what mousebitten obscurity. As presented on **Strict Tempo!** the tunes are well pulverized, bent and stretched, lovingly groped and fondly goosed. Some end up more . . . interesting . . . than pleasurable, but the stunning acoustic-guitar rendition of "Banish Misfortune" alone is worth the price. Richard Thompson's care for his music brings warmth and quiet to the clamorous soul.

Mirror Blue

Richard Thompson. Capital Records; CAP 95713, cassette \$10.95 or CD \$15.50 from Elderly

Strict Tempo!

Richard Thompson. Hannibal; HNBL 4409, cassette \$7.25 or CD \$11.75 from Elderly

seem to have recorded on his own yet (unlike the prolific James Keane), but he plays on **Kilkelly**, with Mick Moloney and Robbie O'Connell. His scorching piano-accordion showcase piece from that album is also to be found on the compilation **The Big Squeeze**.

Makin' the Rounds

Billy McComiskey. Green Linnet Records; SIF 1034, cassette or CD from Alcazar

The Big Squeeze

The Masters of Celtic Accordion: Green Linnet Records; SIF 1093, cassette or CD from Alcazar

McGlynn and Casey don't play together on that many cuts: Donal Lunny is the catalytic constant, playing the synths and bodhran very tastefully. Nollaig Casey is a contest fiddler with a quite traditional sensibility, to judge from her music here; where she stretches that sensibility, it's in another direction — toward the classical — from McGlynn's wacky Okie-from-Cork solos. When they do play together (with McGlynn playing acoustic guitar), they play true duets and not the more usual fiddle with accompaniment — NB the blazing note-for-note unison on "Mominisko Horo" (yup: a Bulgarian number).

Lead the Knave

Arty McGlynn, Nollaig Casey. Round Tower Music; RER 3, cassette or CD from Alcazar

Collected



Mary Black has recorded a half-dozen albums since **Collected**. I haven't heard her put a foot wrong; she has a voice a bit like Emmylou Harris's (yet it's her own) and her music is unfailingly arranged and supported with grace. I blush to confess that I haven't heard either of the recent works that are getting a lot of good comment — **The Holy Ground** and (with Frances Black, Dolores Keane, Maura O'Connell, and Sharon Shannon) **A Woman's Heart**.

There are some substantial surprises on **Collected** — Uilleann pipes and sitar together sound awfully contrived in the describing, but in fact they are beautiful behind Black's voice. And Stephen Foster's "Hard Times" is an unexpected wonder that, time and again, feels like being doused with a bucket of something refreshing.

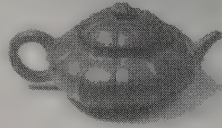
Collected

Mary Black. Gift Horse; GH 10003, cassette or CD from Alcazar

Tea: A convert's enthusiasm

BY GAETANO KAZUO MAIDA

THE WATER ON THE STOVE changes from liquid to near-steam and vibrates the kettle. In its wooden container, a favorite, fragrant oolong from the high mountains of Taiwan lends a faint hint of flowers to the afternoon. The pot, no bigger than a plum, rests on its ceramic "tea plate," a sort of portable sink, along with the small teacups. All my attention moves to the water now: from the kettle, into a large teapot, over and in the little pot, in the cups, into the ceramic pitcher, and back to the large pot to cool a bit. I scoop some of the withered, blue-gray-green leaves into the pot, filling it halfway, then close the container and pour some water in and over. This infusion washes the leaves, and is immediately emptied out into the tea plate. The fragrance of the oolong fills the space between us as I refill the little pot. Within seconds I pour the tea into the warm waiting cups and pitcher. We all take a deep breath, smile, and slowly let the tea enter us. Simple pleasures: conversation and calm attention to the tea, the moment, the companionship.



—All the Tea in China

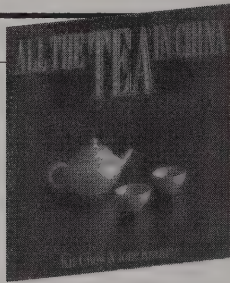
Tea, thee, thay, te, thé, ta, dza, cha, chai, shai — known throughout the world by one or another of these names, *Camellia sinensis* is second only to water itself in consumption as a beverage. Over 2.5 million tons of tea were produced in 1990; 50 billion cups were consumed in the US, a coffee/cola country, alone.

I'm not talking about herbal infusions here — mint, chamomile, rosehips, verbena, burdock, barley, berries, etc. — as they're not from the tea plant, a native of eastern Asia, transplanted to Sri Lanka, Africa, Turkey, Indonesia, and India.

It is remarkable for the enormous variety of its color, shape, texture, taste, chemistry, and cost. Tea requires more than a little knowledge to yield satisfactory results, but the effort of learning what you need to know to find, prepare, and enjoy tea will be rewarded with a lifetime of pleasure.

All the Tea in China

Motivated by a personal inquiry about his health to research the world of tea, author Chow says simply, "Tea saved my life." Like John Blofeld's book, this focuses on Chinese teas — that is, teas produced in China and Taiwan for Chinese consumption, not the export styles. Similar in other ways to Blofeld, there is detailed information about tea history, customs, equipment, processing, and specific varieties. Chow and Kramer add news about tea chemistry, health issues, and purchasing and storing. Useful glossary, index, bibliography, and bilingual (essential!) lists of teas.



All the Tea in China

Kit Chow & Lone Kramer. 1990; 187 pp.
ISBN 0-8351-2194-1

\$14.95 (\$17.45 postpaid) from China Books & Periodicals, 2929 24th Street, San Francisco, CA 94110; 415/282-2994

Tea also promoted a revolution in ship-building. Because tea leaves mold in damp sea air, a rapid passage meant a better tea. The long trip from China to the east coast of the United States took six months to a year around Cape Horn, a powerful incentive to design faster ships. The answer was the clipper.

The tea plant, an evergreen with small, white rose-like blossoms that have also been likened to apple blossoms, is indigenous to China, Tibet, and northern India. Lu Yü's classic mentions a wild tea tree in Sichuan that needed two men with arms outstretched to encircle its trunk. . . .

The genus *Camellia*, to which the tea plant

belongs, is a very old one dating from the Tertiary period, which preceded the great ice ages. The plant was able to survive because the Yunnan and Guizhou plateaus were not affected by the glaciation.

Green tea and black tea come from the same plant. Although certain strains of that plant are preferred for each type, the chief difference lies in processing. The main types of tea are black, which undergoes a process of oxidation, called fermentation; oolong, which is oxidized about half as long (semi-fermented); and green tea, which is not fermented. This process should really be called oxidation, for that is what happens to the leaves. They are not fermented, or worked on by biological microorganisms.

The Book of Tea

Strictly speaking, this elegant 1906 work is not a tea reference. By an art editor and curator who wrote in English, *The Book of Tea* celebrates the essence of traditional Japanese culture, the concept of unity between art and nature. Tea (in particular the Japanese tea ceremony) was the prism through which the author examined the world. The three-by-five-inch Shambhala Pocket Classic edition has the complete text, omitting only the introduction and biographical sketch by Elise Grilli, for only six bucks.

Tea began as a medicine and grew into a beverage. In China, in the eighth century, it entered the realm of poetry as one of the polite amusements. The fifteenth century saw Japan ennoble it into a religion of aestheticism — teaism. Teaism is a cult founded on the adoration of the beautiful among the sordid facts of everyday existence. It inculcates purity and harmony, the mystery of mutual charity, the romanticism of the social order. It is essentially a worship of the imperfect, as it is a tender attempt to accomplish something possible in this impossible thing we know as life.

The world is groping in the shadow of egotism and vulgarity. Knowledge is bought through a bad conscience, benevolence practiced for the sake of utility. The East and West, like two dragons tossed in a sea of ferment, in vain strive to regain the jewel of life. We need a Nu Wa again to repair the grand devastation; we await the great avatar. Meanwhile, let us have a sip of tea.



Pluckers at work in a cooperative near Hangzhou in Zhejiang province, known for its famous Lung Ching ("Dragon Well"), one of the world's finest green teas. —*The Book of Tea*



The Book of Tea

Kakuzo Okakura. Shambhala Pocket Classics, 1906, 1993; 123 pp. ISBN 0-87773-918-8

\$6 (\$9 postpaid) from Shambhala Publications, Order Dept., PO Box 308, Boston, MA 02117-0308; 617/424-0228

The Book of Tea

Okakura Kakuzo. 1906, 1956; 133 pp. ISBN 0-8048-0069-3

\$14.95 (\$17.95 postpaid) from Charles E. Tuttle Co. Inc., Order Dept., PO Box 410, Rutland, VT 05702-0410; 800/526-2778

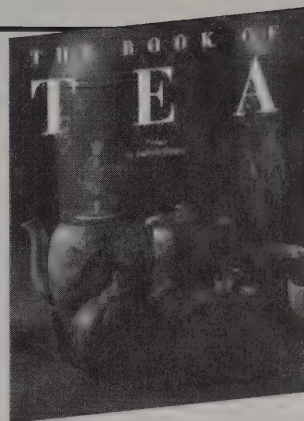
The afternoon glow is brightening the bamboos, the fountains are bubbling with delight, the southing of the pines is heard in our kettle. Let us dream of evanescence, and linger in the beautiful foolishness of things.

The ceremony was an improvised drama whose plot was woven about the tea, the flowers, and the paintings. Not a color to disturb the tone of the room, not a sound to mar the rhythm of things, not a gesture to obtrude on the harmony, not a word to break the unity of the surroundings, all movements to be performed simply and naturally — such were the aims of the tea ceremony. And strangely enough it was often successful. A subtle philosophy lay behind it all. Teism was Taoism in disguise.

The Book of Tea

Not to be confused with Okakura's masterpiece, this glossy coffee-table (sorry) book has a decidedly European perspective. On the other hand, it is visually compelling and offers ample information about specific teas, equipment, techniques, history, and cultivation around the world. It includes a useful glossary, guide to specific teas, and a descriptive list of sources.

To find out what all of the world's finest tea gardens — from the Far East to West Africa — have in common, stroll through one at nightfall. At this hour, the gardens resemble one another. They are brushed by the same thick clouds and cool mountain air, and cleansed by the same rain. They all proffer a concert of rainfall on leaves, of swollen torrents and cascades, and they all exude the same odors of warm, moist earth. For wherever it is cultivated, tea will impart its highly sought, subtle fragrances only if grown in a wet and



The Book of Tea

Alain Stella, et al.. Flammarion, 1992; 256 pp. ISBN 2-08013-533-3 \$50 (\$53.50 postpaid) from Abbeville Press, Customer Service, 488 Madison Avenue, New York, NY 10022; 800/227-7210

temperate climate — long sunny days followed by rainy nights and pure mountain breezes.

Tea Salons

• O'Chame: 1830 Fourth Street, Berkeley, CA 94710. Great food, loose tea, accessories.

• Imperial Tea House: 1411 Powell Street, San Francisco, CA 94133; 415/788-6080. Loose tea; accessories.

• Toraya: 17 E. 71st Street, New York, NY 10021; 212/861-1700 Japanese tea; food.

• Chado Tea Room: 8422 1/2 W. Third Street, Los Angeles, CA 90048; 213/655-2056. Food, accessories.

• Ten Ren Tea Company (Chinese teas): 949 Grant Avenue, San Francisco, CA 94108; 75 Mott Street, New York, NY 10013; 727 N. Broadway #136, Los Angeles, CA 90012; 2247 S. Wentworth Avenue, Chicago, IL 60616

• McNulty's Tea & Coffee Co.: 109 Christopher Street, New York, NY 10012

• Porto Rico Importing Co.: 201 Bleeker Street, New York, NY 10012 (also mail order).

Mail Order

• Tea Luxuries: 1411 Powell Street, San Francisco, CA 94133; 800/567-5898

• Upton Tea Imports: PO Box 159, Upton, MA 01568; 800/234-8327

• Grace Rare Tea: 50 W. 17th Street, New York, NY 10011; 212/255-2935

• Simpson & Vail: PO Box 309, Pleasantville, NY 10570; 914/747-1336

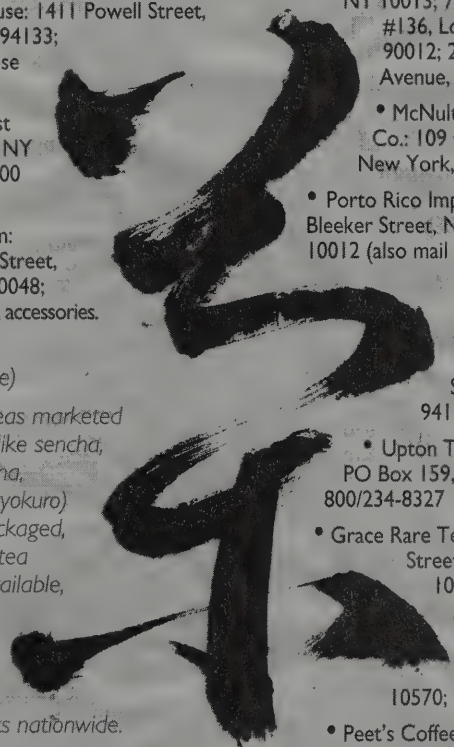
• Peet's Coffee & Tea: PO Box 8247, Emeryville, CA 94662; 800/999-2132.

Tea Shops

(no sit-down service)

Note: Japanese teas marketed here (green teas like sencha, genmaicha, kukicha, hojicha, matcha, gyokuro) tend to be prepackaged, either loose or in tea bags. They are available, usually in reliable vacuum-sealed packs, at oriental groceries and health food outlets nationwide.

• Peet's Coffee & Tea: many Bay Area locations; also mail order, right.



calligraphy by Kaz Tanahashi

Taking Stock

AN EXCERPT FROM *OUTLAW COOK* BY JOHN THORNE

THE sensation of the 1898 Salon des Artistes Français was Joseph-Ferdinand Gueldry's painting "The Blood Drinkers." It depicts the stark interior of a French slaughterhouse. A newly slain ox sprawls in the foreground. One of its slaughterers, his arm dripping with gore, lifts a glass of steaming blood, just filled from the stream still spurting from the animal's heart, to the first of a shambling queue of well-to-do invalids — men, women, children — each waiting a turn to drink.

French doctors then believed such treatment strengthened the weak blood of their patients, and the public fascination with the painting sprang from the same macabre irony as today's organ transplant dramas, where the seriously ill wait for the death of a healthy body so that they might inherit its organs. Gueldry contrasts the vitality of the dead steer with the pallid frailty of the invalids — and contrasts as well their palpable disgust at the drink they are forced to down with their equally palpable desire for the life they hope it promises.

Gueldry's painting still disturbs, but only vicariously, for it can no longer draw us into the scene it portrays. The blood drinkers merely revolt us; we cannot put ourselves in their places. And time has given the graphic depiction of the act of slaughter a patina of nostalgia that was not there when the artist painted it, a feeling, even, of intimacy.

Although the room itself, large and floored with concrete, has a modern impersonality, the carcasses that hang from the overhead rails are not numerous and their slaughterers only two. The victim was led to its death by a rope. The sledgehammer that stunned it lies in full view — a single, simple instrument.

And then there is the beast itself. The eye is immediately drawn to it — especially the modern eye, for it is this, not the invalids, that has become the real object of its curiosity. The mind — except that of the very squeamish or the resolutely vegetarian — does not balk at the sight of one dead ox.

The original viewers of this painting, especially, knew where meat comes from. They had seen whole carcasses suspended from their butcher's ceiling; they had heard the bellowing from the local abattoir. All that Gueldry removed from the equation was the cook, intermediary between the raw and the roast. For a moment, the curtain was pulled back and appetite suddenly saw itself in the nude.

This is the fulcrum by which Gueldry's painting works. If the idea of that mouthful of hot blood only revolts you, the theme becomes mere sentiment: poor ox, poor invalids, poor viewer. But if a flicker of desire also stirs within, then your reactions become more complex, your understanding more difficult, the painting — for all its limitations as genre — art.

Today, our eyes see but do not comprehend. Our appetite does not know the way back to the ox, for it balks before the workings of the modern slaughtering plant. It cannot imagine a whole herd of bawling cattle, strung by their hind legs, swinging down the conveyor belts, one after another, to meet their death from the blow of a pneumatic jackhammer.

We cannot respond to such an image, not because it is so horrible, but because carnage at this scale is immediately anesthetizing. If anything, the slaughtering of a single animal with hammer and knife is more horrible because we *can* imagine it. But what cannot be imagined cannot be experienced. Our slaughterhouses no longer offer experience and so we learn nothing — we are given nothing — from the death of the animals we eat.



• • •
The essential premise of stock is a good one: letting nothing go to waste. This means, first, finding a way to eat animals that, while edible, have not been raised strictly to be eaten. Once, not so long ago, much of the meat served on all but the tables of the rich came from animals that had already led useful lives as beasts of burden or wool producers, or careerists who had sent eggs and milk to the table before arriving there themselves.

Furthermore, in those days, because of the vexing problems of spoilage, animals were slaughtered locally, sometimes even at home, supplying ample trimmings and bones (not to mention offal). A cuisine based on stock begins with such butcher's leavings — bones, especially, but also cuts of meat too tough to eat. Butchers then had whole carcasses to contend with, not cartons of selected parts. To keep the profitable cuts moving they had to shift all the rest, too, for such price as they could get.

A cuisine based on stock also requires *gardinage* in plentiful supply: vegetables that come home with all their parts attached; herbs sold not dried in little expensive bottles but fresh in big fragrant penny bunches.

Finally, a cuisine based on stock is a cuisine faced with the problem of kitchen waste. It is a part of the cooking of families that are large and rarely nuclear — of maiden aunts and bachelor uncles, aged grandparents, nephews from the country looking for a job, all crowded round the supper table.

Stock speaks of a time when the good housekeeper served the tops she had cut off from the turnips and the poached beef out of which she had made her broth, and then she scraped the serving platters clean. She cut away the bits of meat that might make up a shepherd's pie and divided the rest between the stockpot and the dripping jar.

Our kitchens do not see this kind of wastage. Today, the disposal of such garbage is not put into our hands. Except for fruit and the most durable vegetables, everything we now buy has already been trimmed of nature's generous *lagniappe*. The appeal of meat stock or broth has always been that it is a richness come from nowhere, made from scraps and bones that the careless throw away. Al-

though its public face is frugality, its private one is glee: something good for nothing; meat for free.

This is no longer true. Decent meat is relatively cheap and we can get as much of it as we want. We are stock-poor because we are so meat-rich. No self-respecting butcher in America today would sell the meat you need to make a true bouillon, and, even if he would, he'd be hard pressed to find any. Genuine mutton, real stewing hens, tough old goat: none of this exists except for those who raise it. Many markets refuse even to carry the unfamiliar, tougher cuts — tail, neck, feet, tongue — of the tender animals we eat.

• • •

A culture's appetite always springs from its poor. Stock is the foundation of so many dishes of "grand" cuisine because these were created at a time when boys became chefs for food, not fame. Born hungry, they wove dishes for the rich in which their own appetite ran wild. They stuffed meat with more meat, enriched their gravies with the sweetest of suets, sought to distill out of bone and gristle a concentrate that would imbue any dish with what most propelled their hunger.

This kind of intimate connection between eater and eaten has almost vanished from our cooking, despite the scattered remnants that remain behind to hold its memory. Today's young chefs may be trained in stocks and sauces, but as much as they draw on personal experience their culinary instincts flower most easily at the grill, with its focus on drawing flavor from a particular piece of meat. There is no longer a cuisine of the carcass; it is a cuisine of the *cut*.

Rich and poor alike, none of us likes being reminded of the whole from which our meat is cut; even less do we wish to consider edible the framing that holds it all in place. The only carcass that we regularly encounter is that of the chicken, and even here most of us prefer to buy that bird already cut into parts — though it would take only a few moments to cut it up ourselves so as to have the trimmings to do with as we please. If we don't bother, it is because our honest impulse is to throw all that away.

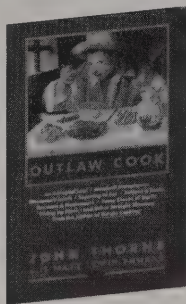
• • •

American cooking, tumbling as fast as it is toward a totally take-out cuisine, retains two potent images that can still revivify our appetite for good, home-

Outlaw Cook

John Thorne ("a child forced to learn self-control in a candy store") is an austere elegant writer whose suspicion of fashion warms my heart. His newsletter, *Simple Cooking* (WER 70:119), always charges me with enthusiasm and respect for the making of food. *Outlaw Cook* takes a couple of big steps away from the subject for a clearer view of what the cook is getting up to.

The essay on these pages has been abridged, and quite roughly. —JD



Outlaw Cook

John Thorne & Matt Lewis Thorne.

North Point Press, 1992; 378 pp.

ISBN 0-86547-479-6

\$10 (\$13.50 postpaid). Putnam Publishing Group, Order Dept., PO Box 506, East Rutherford, NJ 07073; 800/788-6262

made food: baked goods, which stand for the gift of pleasure, and meat-based broths, from which all the kitchen's healing goodness flows.

Not too long ago, this image reflected a truth: a continuous river of broth spilled from the stockpot to inspire soups, enhance pasta and rice, baste the roast, sauce the vegetables, and provide a sop for bread. And, most important of all, its aroma filled the house, cossetting all who inhaled it with deep well-being, as if the very air were filled with nurture. The chef may have transmogrified his meat waters into gold; the housewife transmuted them into a far more essential nutrient: love.

To understand the power of such broths over our collective unconscious, we must remember that until very recently they were thought to contain — whether stock, broth, or bouillon — an essential, life-enhancing *goodness*. It was not simply minerals, protein, vitamins that the home cook sought to extract from the stuff of the stockpot but the actual vigor and good health of the animal whose parts these were.

We don't seek to consume them, after all, in sickness or old age but, as much as possible, in their prime. We drink their health: and that glass of blood from Gueldry's ox, transmuted by the cook, becomes the cup of broth, of stock. As one is to living meat the other is to cooked — the vital fluid, reduced and concentrated.

However, it was the animal's *body* that oriented appetite, centering what it searched for and giving every part it found a role. By the time the brains were scrambled, the sweetbreads poached, the bones sucked dry of marrow — the vitals of the animal devoured — its *vitality* was totally absorbed. But as fewer and fewer of us have held the hot, soft body of a freshly slain hen or stunned a wildly flapping fish, our cuisine has recoiled that much further from any intimacy with the bodies we eat and their sacrifice has lost all its imaginative weight.

In response to our appetite's disorientation, our culture's metaphors of wellness are shifting. Although we continue to pay lip service to the healthfulness of liver and chicken stock, the truth is that the phrase "health food" now conjures up images that are becoming entirely *anti-meat*. Today, we seek our magic potions in oat bran and canola oil; the noxious concoctions we force ourselves to drink for the sake of health are made of torula yeast, of "tiger's milk," not bull's blood.

Why then aren't we turning to wholesome vegetable broths? Although they exist, they remain an anomaly, a minority concern. Nourishing, yes, but there is no blood in them, no gift of life. If there were anything compelling to the imagination in the vegetable's sacrifice to provision us we would by now all be vegetarians. But there isn't — and we're not.

Instead, in the country of surfeit, the half measure is king. If we can't bear to push our meat plate entirely aside, we can't quite take pleasure in it either. We want beef that is at once fatless and tender; we want chicken that is all breast. And we have the pallid stew, the watery chicken soups, and the pot roasts flavored with onion-soup mix to prove it. We're clinging, as a culture, to a cooking that is no longer possible. As appetite has lost its hold on the necessary ingredients, those ingredients have changed . . . or gone away. ☹

On Fire

Larry Brown seemed to come out of nowhere a few years ago, with a fierce novel, a shower of swell short stories in two collections, and (in 1992) the perfect *Joe* — I haven't read a better novel since.

Before he was a published writer, Brown was a fireman in Oxford, Mississippi. *On Fire* is partly a fire-department memoir and partly an agglomeration of scraps: exercises in razor observation and storytelling in the plain style. Not all have the laconic gracefulness of his fiction — it's harder to channel and manipulate reality, I suppose. But it's a pleasure to get to see, piecemeal, the constituents that add up to Larry Brown stories. —JD

■ The men to my left and right are eight feet away. We dig the hole with the dibble, bend and put the pine tree in it, stick the dibble in the ground behind it, push it forward to close the hole around it, twist it, pull out the dibble, kick the hole with the heel, move forward six feet, bend again.

The wind is blowing and it freezes our hands through our gloves. We don't speak. We are on something like a plateau and the hills for many miles away are open to us. It is cold and sad. Our day has just begun.

After a while it starts snowing, big wet flakes that fall soundlessly on our shoulders and melt. It falls thicker and faster and the landscape starts turning white. The hills in the distance are removed and we keep moving forward. We are far from the truck. The black men around me are dark ghosts moving through the snow. Then we hear the faint sound of the horn on David's truck. He is calling. Calling us back.



On Fire

(A Personal Account of Life and Death and Choices)

Larry Brown. Algonquin Books of Chapel Hill, 1994;

182 pp. ISBN 1-56512-009-4

\$17.95 (\$20.95 postpaid) from Workman Publishing Co., Consumer Orders, 708 Broadway, New York, NY 10003; 800/722-7202

● Wayne Johnson Apartments are on fire. Out of sleep and into it again, full throttle, hard as we can go. The temperature is holding around five degrees. Will and I are working out of Station No. 3 and it's a short run, only about two blocks, and we roll up first and see in the yard a man on his back in front of the blazing apartment, fire leaping out the windows, the glass broken already, the flames lighting up the chairs and tables and cabinets melting and burning inside. The man on the ground is smoking. I don't mean smoking a cigarette. I mean the *man* is smoking.

● Rain dropped out of the sky all of a sudden about nine o'clock. I got up right away and got on the Honda to go after Shane, but I

was soaked before I got there. I was thinking I'd have to walk back out in the woods to the stand and get him, but he'd already unloaded his gun and come down and was walking up the trail to meet me, dripping wet, grinning with his braces. The other day, my two boys and one of my fire-department partners rode on the four-wheeler, all at the same time, and tore off the right rear fender, so now the wheel slung mud all over us and our guns. We went home. After I got the guns cleaned I made a pot of coffee and put on clean dry clothes down to my skin and got the paper and stretched out on the couch where it was warm, MA working in the kitchen, just contented as a wet beaver that we were all home together on Thanksgiving, football on, the nest complete.

The R&B Box

Rhythm and blues can be down and dirty, romantic, silly. It was the bridge between blues, jazz, and rock and roll (some of the best R&B, like Big Mama Thornton's "Hound Dog," became great rock and roll) and held its own through three decades' shifting styles of pop music.

Now, Rhino Records has released a six-CD set of the best R&B from 1942 to 1972. It is a difficult undertaking to cover a period of that length — I often wished that they had included more songs of individual artists — yet Rhino did an admirable job. With 108 songs by 108 artists as diverse as Louis Jordan, Ray Charles, Little Richard, LaVern Baker and Professor Longhair, Rhino has provided a wonderful introduction to R&B. I only wish it were longer. —Wade Fox



30

years

Fire from Heaven

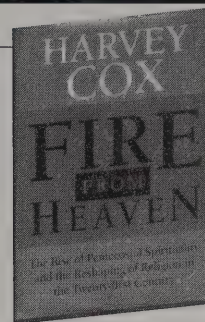
Harvard professor and Baptist minister Harvey Cox admits that he (in *The Secular City*) and others acted prematurely when they announced the death of God nearly thirty years ago. He now reports, on the basis of a worldwide study, that at least one religious movement is growing by leaps and bounds. Pentecostalism, having started in one small black church in Los Angeles a century ago, has today more than 400 million devotees. Its appeal is mostly to the urban poor, to whom it offers not just pie in the sky but the motivation to improve their lives, similar in this to Latin American liberation theology. Stressing an immediate experience of God, it differs from fundamentalism, for which the letter of Scripture is determinant. Yet, as Cox notes, it is threatened from within by the growth, in its more affluent congregations, of a fundamentalist faction that would identify it with the religious-political right. A fascinating story, sprightly and personal. —Gary MacEoin

• It has succeeded because it has spoken to the spiritual emptiness of our time by reaching beyond the levels of creed and ceremony into the core of human religiousness, onto what might be called "primal spirituality," that largely unprocessed nucleus of the psyche in which the unending struggle for a sense of purpose and significance goes on.

• For any religion to grow in today's world, it must possess two capabilities: it must be

able to include and transform at least certain elements of preexisting religions which still retain a strong grip on the cultural subconscious. It must also equip people to live in rapidly changing societies where personal responsibility and inventiveness, skills associated with a democratic polity and an entrepreneurial economy, are indispensable.

• Glossolalia [speaking in tongues] is a mystical-experiential protest against an existing religious language that has turned stagnant



Fire from Heaven

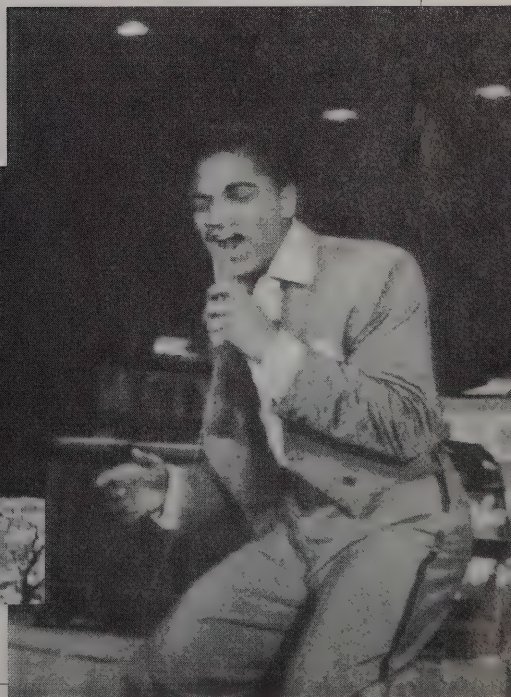
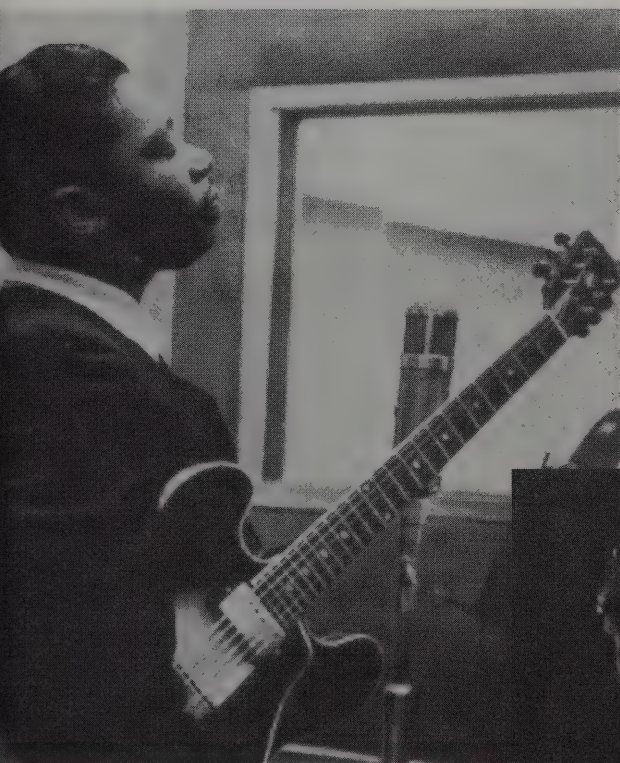
(Pentecostalism, Spirituality and the Reshaping of Religion in the Twenty-first Century)

Harvey Cox. 1995;

346 pp. ISBN 0-201-62656-X

\$24 (\$28.00 postpaid) from Addison-Wesley Publishing Co., Order Dept., 1 Jacob Way, Reading, MA 01867; 800/447-2226

or been corrupted. But glossolalia does not occur in a vacuum. It almost always takes place among people who are themselves culturally displaced, and often politically or socially disinherited as well. It is a form of cultural subversion, a liberating energy.



The R&B Box

(30 Years of Rhythm & Blues)

James Austin, Richard Foos & Billy Vera, Producers. 6 CD set #R271806

\$74.98 (\$77.98 postpaid) from Rhino Records, 7930 Alabama Avenue, Canoga Park, CA 91304; 800/432-0020

of R&B

Chasing the Monsoon

The sudden burst of torrential rains after interminable months of stifling Indian heat may be the world's most dramatic annual meteorological event. Political differences forgotten, every citizen of the subcontinent eagerly monitors the progression of storms across the Indian Ocean, searching for clues about the date of this year's onset. Alexander Frater follows the monsoon's unsteady northerly progress, pursuing its bliss and destruction as well as his own family ghosts. Elegantly insightful and humorous, he captures the delirious celebration and relief with which India greets its liquid transformation. If all travel books were this good, everyone would just stay home and read. —Karen Van Epen

• Heaving a door open I stepped outside. Soaked to the skin within seconds I felt a wonderful sense of flooding warmth and invigoration; it was, indubitably, a little bit like being born again. Raindrops rang like coins on the flagstoned path and the air was filled with fusillades of crimson flowers from the flamboyant trees; they went arcing by like tracer and, raked by an especially mean burst, I can testify that flamboyant blossoms hitting you in the eye at 60 k.p.h. cause pain and temporary loss



Chasing the Monsoon

(A Modern Pilgrimage Through India)

Alexander Frater. Owl Books, 1991;

273 pp. ISBN 0-8050-2052-7

\$12.95 (\$15.95 postpaid) from Henry Holt

and Co., 4375 West 1980 South Street, Salt Lake City, UT 84104; 800/488-5233

of vision. At Fort Cochin they were ringing the bells in St. Francis Church. In the dark harbour small boats ran for home. Waves bursting over the scarlet sea wall were suffused, curiously, with pink light. The jetty, set under a small wooden gazebo, vanished beneath the heavy surf. Orange tiles cladding the gazebo's steeply pitched roof began to tremble until, like clay pigeons being sprung, they went whirling off into the murk one by one.

Then, from the corner of an eye still watering from the flower strike, I witnessed an astonishing scene. Two straining waiters held the coffee-shop door open while a party of men and women filed into the storm. The men wore button-down shirts and smart business suits, the women best-quality silk saris and high-heeled shoes; as they emerged, they opened their arms and lifted their faces to the rains.

The Spices Board had come out to greet the monsoon.

They made for the jetty, strolling, laughing out loud, calling, revolving slowly in a kind of dreamlike gavotte. In the gazebo they stood knee-deep in seething water while the wind blew spiralling flumes of rain up over the peak of the disintegrating roof; the flumes united there in a fountainhead which, along with the tiles, kept getting snatched away. Buffeted by the gusts, unbalanced by the waves, the Spices Board executives clung to each other with water in their eyes and looks of sublime happiness on their faces. A young woman in a soaked and flapping gold-coloured sari laughed at me and clapped her hands. "Paradise will be like this!" she shouted.

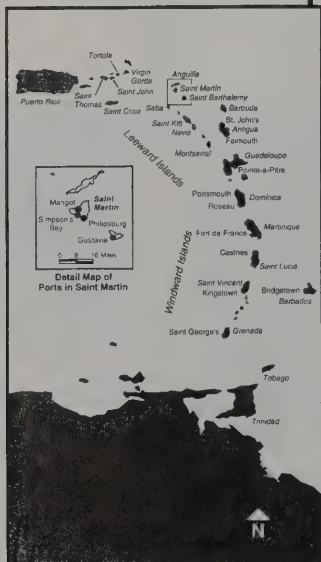
Dancing Up The Moon

Poet and therapist Robin Heerens Lysne's book is a stunning depiction of the power of rituals and the subsequent changes in those performing them. Rituals for marriage, birthdays, rites of passage, death, divorce, miscarriage, abortion and rape are dramatized through vignettes.

Buddhist and Native American traditions influence this luminous work. Rituals can be extremely simple. Since rituals are personal, they may also include stories, performance art, poetry and songs the participant has written.

—Janet Petri-Haines

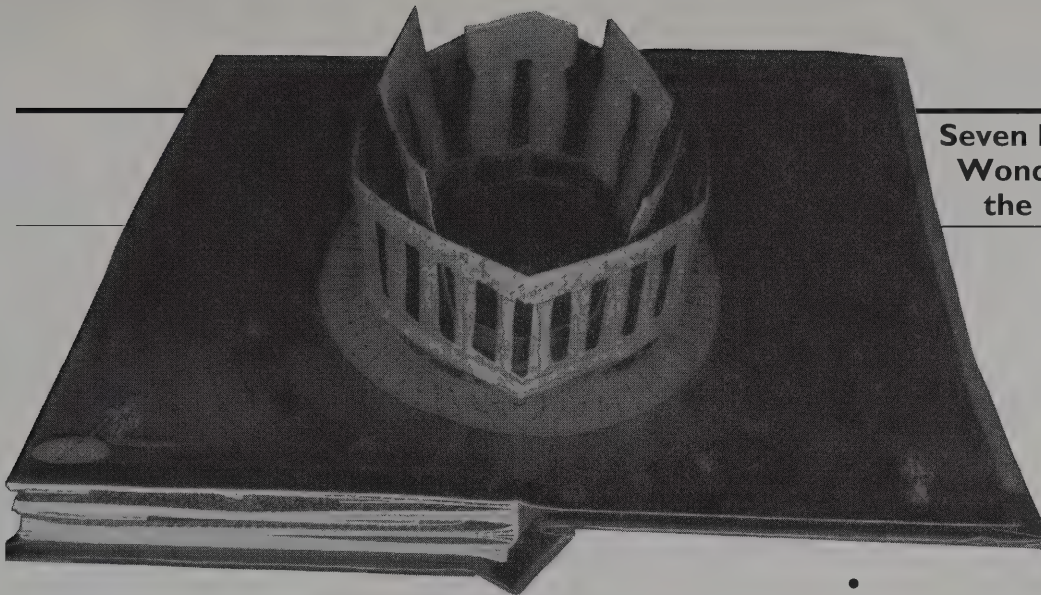
• Divorce: I tied one end of the rope to a heavy chair and held the other end in my left hand. With my right hand I picked up the ax and declared, "Jason, I hereby sever my connections with you once and for all. I release any remaining anger, sadness or feelings of resentment. I forgive you and I bless you and let you go on your journey, may you find peace." At that, I let fall the ax and severed the rope. Then I said, "Great Spirit, I forgive myself. I pray to find the mate who will support me as I support him, who accepts me for who I am and whom I can accept, someone I can grow



ANOTHER GREAT RESOURCE

The Seagoing Hitchhiker's Handbook

(Roaming the Earth on Other People's Yachts):
Greg Becker. 1994, High Adventure Publishing.



Seven Mysterious Wonders of the World

A real Pop Tart of a book. You can visit Atlantis, the Bermuda Triangle, and Easter Island with your morning coffee.

Take the kids on a mystery tour, open the book and Stonehenge stands up for the family to view. What a well-thought-out little book. —Dan Svagerko

The sinister reputation of the Bermuda Triangle began with Columbus's first voyage. As the ships entered the Sargasso Sea, a calm and slowly rotating region of the Atlantic Ocean, the jittery crew could see only seaweed stretching to the horizon, and feared they would run aground. Crawling with strange sea creatures, the thick growth seemed to mire the ship. A flying comet, an erratic compass, and lights glowing on the horizon marked the first venture into this eerie sea, and the rumors and legends so familiar today began.



Dancing Up the Moon

(A Woman's Guide to Creating Traditions That Bring Sacredness to Daily Life)

Robin Heerens Lysne. 1995; 220 pp.
ISBN 0-943233-85-2

\$12.95 (\$16.20 postpaid) from
Conari Press, 1144 65th Street, Suite B,
Emeryville, CA 94608; 800/685-9595

with instead of against — all in the right timing. I light this candle as a symbol of my faith.”

Overwork: The four of us sat in silence for a moment. It had worked. I felt the shift inside my body. I could feel the dream-made-real settle into my cells. A slight breeze kicked up and tiny red squares of cloth lifted off Lisa and blew the tray near the candles. She removed the mask from her head and the ritual was over. I knew I would not throw myself out of balance to the point of exhaustion again. I felt this promise to myself become an unwavering part of my consciousness. The silent support from my friends surrounded me like the cool night air.

Seven Mysterious Wonders of the World

Celia King. 1993; 30 pp. ISBN 0-8118-0361-9

\$9.95 (\$13.45 postpaid) from Chronicle Books,
Order Dept., 275 5th Street, San Francisco, CA 94103; 800/722-6657



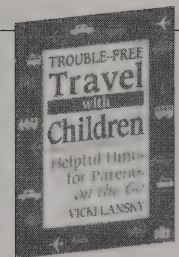
Trouble-Free Travel with Children

Ms. Lansky has accumulated just about every piece of sage advice on traveling with children. Though some information may be dated (Ticketron is no more), and the book is geared more toward children three and under, it is still a treasured resource and one I'm glad to add to my collection. —Ed Tankus

Remove disposable diapers from boxes and stash them in the corners of suitcases or tote bags if you are trying to cut down on luggage.

Consider two rooms, if your budget allows; everyone may sleep better. If you have two adults, book two rooms as singles with a child for each adult. You can save 25% to 40% on your room rates this way.

Let the children picnic in the bathtub as an adventure for them and an easy cleanup for you.



Trouble-Free Travel with Children

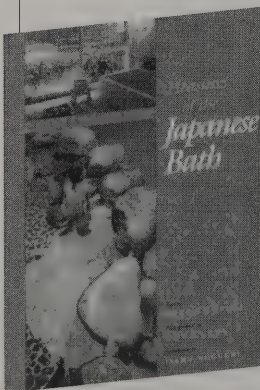
(Helpful Hints for Parents on the Go)
Vicki Lansky. The Book Peddlers, 1991;
148 pp. ISBN 0-916773-14-0
\$6.95 (\$9.45 postpaid) from Practical
Parenting, 18326 Minnetonka Blvd.,
Deephaven, MN 55391; 800/255-3379



Pleasures of the Japanese Bath

Peter Grilli grew up in Japan and has sustained his explorations of Japanese hot springs and public baths his whole life, even building a traditional furo at his home in New York. This ambitious book illuminates the history, culture, art, and above all the pleasures of the Japanese bath tradition. Dana Levy took the photographs over a ten-year period, and has designed a visually stunning presentation of wood block prints, drawings, photos, postcards, and calligraphy. They have kindly (or cruelly) included a very tempting guide to over a hundred Japanese hot springs.

—Gaetano Kazuo Maida



Pleasures of the Japanese Bath

Peter Grilli & Dana Levy. 1985, 1992;
192 pp. ISBN 0-8348-0253-8
\$24.95 (\$29.95 postpaid) from Weatherhill,
Inc., 41 Monroe Turnpike, Trumbull, CT
06611-1315; 800/437-7840

• The classic *furo* (bath) was a box of *hinoki* wood, sacred and fragrant, with a fire chamber set into one end. The fire was fed from the outside with twigs to transform the water into *o-yu* (hot water) — a gradual, time-consuming process. So the bath fire was lit early, allowing time for a leisurely soak that would keep one warm till bedtime. The same was true of the public bath and the *onsen* (hot spring bath), where the heat is of so penetrating a sort as to act as a blanket, like it or not.

• To some, the Japanese bath approaches a religious experience. To others, its chief purpose is sensual gratification. Some turn to the bath seeking a cure for the most severe disorders of the body. Still others find in it a means of treating the afflictions of the spirit far more effective than the analytical approaches of Western Freudians.

• Until the establishment of public baths in the sixteenth and seventeenth centuries, it was chiefly Buddhist temples that provided bathing facilities for the Japanese populace. The aristocracy and the powerful military families had private baths in their palaces and castles, but it was the responsibility of the Buddhist clergy to bathe the people at large.



The public baths of Edo provided continuous inspiration for the facile and inventive brush of Katsushika Hokusai. The *Hokusai Manga*, a series of sketchbooks, abounds in drawings of nude figures bathing, many of which were later translated into more complex compositions.

ANOTHER GREAT RESOURCE

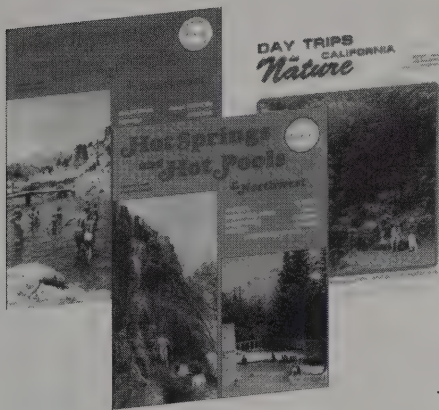
Taking the Waters (Spirit, Art, Sensuality):
Alev L. Croutier. 1992, Abbeville Press.
This homage to bathing from prehistory to the present is comprehensive and lavishly illustrated. Includes bibliography and a select guide to spas.

Hot Spring and Nature Guide Survey

Those of you who would crawl a mile to soak in a hot spring, these guides are for you. And actually you may have to do just that to access some of the locations mentioned in *Hot Springs and Hot Pools of the Northwest*, *Hot Springs and Hot Pools of the Southwest*, and *Day Trips in Nature: California*. The authors have included seemingly every backwoods toe-soaker west of the Rockies. For those who must have indoor plumbing the authors list many resorts.

Here you will find answers to questions you may want to ask when planning a hot springs visit or a serious hike: how primitive or remote is the site; how close is the nearest hospital; is nudity customary? The authors furnish general-location maps in all three books and the day trips guide offers info for ordering trail maps. Topographic details will be helpful to even the casual hiker.

Most of the site descriptions are neutral in presentation, yet a few seem to have been lifted right from the resort's brochure. Also, some information is ambiguous or inaccurate. As when researching any trip, if a certain service or feature is of utmost importance to you, it's best to call to confirm availability. —Linda Morgan



• **Fallen logs at Terwilliger Hot Springs are part of the primitive forest setting.**
—Northwest

Day Trips in Nature: California

Jayson Loam, Luis Gonzalez & Karen Cunningham. 1991; 192 pp. 1991.

Hot Springs and Hot Pools of the Northwest

Jayson Loam & Marjorie Gersh. 1993; 193 pp. ISBN 0-9624830-5-2

Hot Springs and Hot Pools of the Southwest

Jayson Loam & Marjorie Gersh. 1994; 194 pp. ISBN 0-9624830-6-0

Each title \$14.95 (\$16.95 postpaid)
from Aqua Thermal Access,
55 Azalea Lane, Santa Cruz, CA 95060



• Keough Hot Ditch

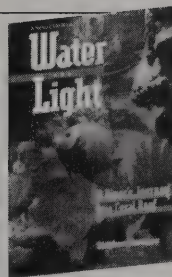
Natural mineral water flows out of the ground at 128° on the property of Keough Hot Springs, then wanders northeast over BLM land for about a mile before joining with a cold water surface stream. Volunteer-built rock dams create several primitive pools of various depths, each one cooler than the preceding one upstream. The apparent local custom is clothing optional.

No services are available on the premises. There is a limited amount of level, unmarked space on which overnight parking is not prohibited. It is one mile to an RV park, and eight miles to a restaurant, store and service station. —Southwest

Water and Light

This impressionistic and personal account of a diving journey to a coral reef is a compelling read for anyone who wishes to experience the more esoteric and spiritual side of the underwater world. —Tom Valtin

• At some sites the wall was a sheer vertical drop into the darkness, at others the descent was interrupted by a staggered series of terraces. But there was always the feeling of deep ocean beneath, a sensation like no other on earth: hanging unsupported along the face of a precipice with miles of blue nothingness ahead and the black ocean pit below. I felt like Wile E. Coyote in the "Road Runner" cartoons, when he inadvertently runs past the lip of a cliff and stands there in midair, looking sheepish as he awaits the plummet.



But the plummet never came, and that was the magic. Instead I would let myself drop, descending at my own pace, following the wall for fifty, sixty, seventy feet as the color bled away and the hard, expansive corals gave way to softer things, to deep water lace and the looping coils of sea whips that grew straight out from the wall. It was a region of colorless filigree, of waving, pliant forms that gave no resistance to the crush-

Water and Light

(A Diver's Journey to a Coral Reef)
Stephen Harrigan. Sierra Club Books, 1992; 277 pp. ISBN 0-87156-453-X
\$12 (\$15 postpaid) from Sierra Club Store
Orders, 730 Polk Street, San Francisco, CA 94109; 800/935-1056

ing weight of the water. I would punch the inflator button on my buoyancy vest as the sea's increasing density threatened to draw me deeper, into what I imagined as a region of ghoulish bioluminescent fish and steaming ocean vents. A part of me wanted to go there, but I hovered instead at a sensible depth, looking out and not down, out toward the trackless blue water beyond the reef, water that was like a magician's cloak from which anything could materialize.

A Bamboo Survey

by Kazen Van Epen



The Fourth World Bamboo Congress

Because it can sustain frequent harvests without losing its root vitality, bamboo is extremely valuable. Plant it to hold the soil, and you can put it to an almost infinite number of other uses.

Next summer in Bali, at the Fourth World Bamboo Congress, Festival and International Bamboo Research Workshop: Bamboo, People, and the Environment, you can see the state of the bamboo arts worldwide: architecture, science, industry, crafts, medicine, habitat rehabilitation, music, & cooking. The Congress will take place in four enchanted valleys cared for by Irish bamboo visionary Linda Garland. One valley for a trade show, enhanced by music from all over the world played on a bewildering variety of bamboo instruments. One valley for displays of bamboo architectural virtuosity, as well as the musical kind. Another

valley for open meetings about successes and problems with bamboo businesses and environmental design. In the fourth valley scientists will report on their work, participating in workshops on the use of bamboo for bioremediation, agroforestry, environmental protection, and more. All these people will be sharing information about this most versatile and important plant, hoping to increase its planting worldwide.

The Fourth World Bamboo Congress is sponsored by the International Bamboo Association (IBA), the International Network of Bamboo and Rattan (INBAR), and the Environmental Bamboo Foundation (EBF). In Europe and the Americas write to Fourth World Bamboo Congress, 849 Almar Ave., Suite C-272, Santa Cruz, CA, 95050. In Asia, Africa and Australia write to EBF, PO Box 196, Ubud 80571, Bali, Indonesia.

The Book of Bamboo

Hooray! The Sierra Club has reprinted a previously out-of-print jewel. What Kevin Kelly said at the time still holds: "This is the consummate guide to bamboo utility — as food, as shelter, as landscape, and as a grove of inspiration. Every known use of bamboo is presented with as much practical information as possible. For identification about 170 species are described in detail. In half of the US some of them will grow in your backyard. It's thickly illustrated, too."

Bamboo was used to make guns in twelfth-century China. Metal barrels soon replaced bamboo, but the metalworkers continued long afterwards to include the bamboo nodes in their designs.

The Book of Bamboo

David Farrelly. Sierra Club Books, 1984, 1995; 347 pp. ISBN 0-87156-825-X. Will be available in June 1995. \$20 (\$23 postpaid) from Sierra Club Store Orders, 730 Polk Street, San Francisco, CA 94109; 800/935-1056



銃鳥

The Bamboo Fences of Japan

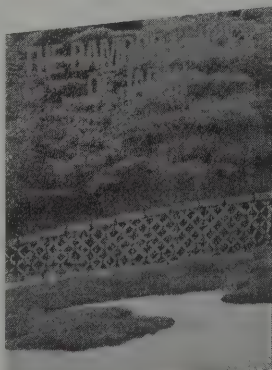
A highly refined craft in Japan, with myriad traditions and styles, bamboo fences seem like a viable business idea in this country, too.

Elegant designs, carefully photographed in color or drawn, are the point of this bilingual book.

The Bamboo Fences of Japan

Osamu Suzuki & Isao Yoshikawa. Graphic-Sha Publishing Co., 1988; 138 pp. ISBN 4-7661-0474-9 \$44.95 (\$48.95 postpaid) from Books Nippan, 1123 Dominguez Street, Suite K, Carson, CA 90746; 800/562-1410

Bold ōtsu fence with dōbuchi of stout round bamboo. Ryōanji Temple, Kyoto.



The Bamboos

The classic western language text on bamboo horticulture and botany, this comprehensive study is useful for its wealth of detail about taxonomy, growth, propagation, and cultivation. F. A. McClure is careful to mention the different uses he has seen for each type of bamboo. Lynn Clark, an innovative botany professor at Iowa State University, outlines new developments in bamboo since this book was first published almost thirty years ago. Kudos to the Smithsonian for rescuing this previously out-of-print book.



Fig. 86. *Oehlandra travancorica*: 1, leafy flowering branch; 2, culm sheath; 3, pseudospikelet, showing one keel of the lowermost bract (prophyllum); 4, the one-flowered spikelet, with two bracts still attached, and the flower in anthesis; 5, 6, bracts; 7, lemma; 8, palea; 9, lodicules; 10, stamen; 11, gynoecium; 12, 13, stigmas, much enlarged; 14, fruit, still surrounded by the lemma, palea, and bracts. Redrawn from Gamble 1896:Pl. 111.

The Bamboos

F. A. McClure. 1966, 1993;
345 pp. ISBN 1-56098-323-X
\$17.95 (\$20.20 postpaid) from Smithsonian
Institution Press, Dept. 900, Blue Ridge Summit,
PA 17294; 800/782-4612



Temperate Bamboo Quarterly

"A forum for sharing information and views among bambuseros," this publication reports on bamboo growing and use in the US and the rest of the world. Book reviews, happenings, gardens & nurseries, research, and business.

Temperate Bamboo Quarterly

Adam & Sue Turtle, Editors. US subscriptions \$24/year (4 issues), Canada & Mexico \$32/year, other foreign \$36/year from 30 Myers Road, Summertown, TN 38483-9768

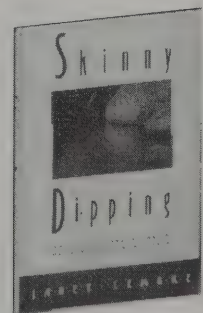
The Longsheng area of Guangxi is famed for its dramatic dragonbacked rice terraces. Rising 3,000 feet from the valley floor, the paddy fields are the result of 18 generations of toil by the Zhuang minority people. An intricate irrigation system of bamboo pipes keeps the terraces well watered.

Skinny Dipping

Janet Lembke lives her life simultaneously in the hard-edged realities of the real world and in a mythic world peopled with the likes of elementals, naiads, and Aphrodite — equally at home in both. Throughout the essays in this book runs the mystical thread of water as nurturer, as creator, as destroyer, as divider of the quick and the dead. A cavern tour becomes a meditation on the passage of time, both geological and personal. A summer downpour is an affirmation of the measureless fertility of the primal coupling that brought us all into being. To join her in her musing is a joy and a revelation. —Andrea Chase

In company or alone, I often have no particular destination in mind but simply ride whatever wave or whirlpool sweeps me up. After all, where else but in rivering, hitherandthithering imagination do the waters of Babylon still rise, or the primal seas of Genesis? Where else the River Styx, the reflecting pool in which Narcissus adored his image, and the salty spate of tears wept by Niobe, who boasted that she was more fortunate and fecund than the gods and, for such presumption, such overweening pride, saw every one of her fourteen children destroyed? Where else might a rose bud and sprout at the bottom of the sea, or a chimney sweep develop gills? Come with me. Take off the old habits. Plunge in.

The tour of wonderland takes us past the shallow reflecting pool of Dream Lake; past the intricate filigrees, the layered wedding cakes of Totem Pole Valley; past the delicate and never-moving draperies of Saracen's Tent; past the massive Fallen Stalactite, which an earthquake shook loose from the ceiling seven millennia ago; past the gargantuan columns of Giants' Hall; and into the great room called the Cathedral, where electrically activated hammers with rubber tips strike formations, selected by an English tuning fork, to play slow tunes. We're told that the contraption is an organ, but it's not, for the sound does not depend on pipes and air. It's a percussion instrument, a great xylophone, made not of wood but petrified water, that covers three acres.



Skinny Dipping

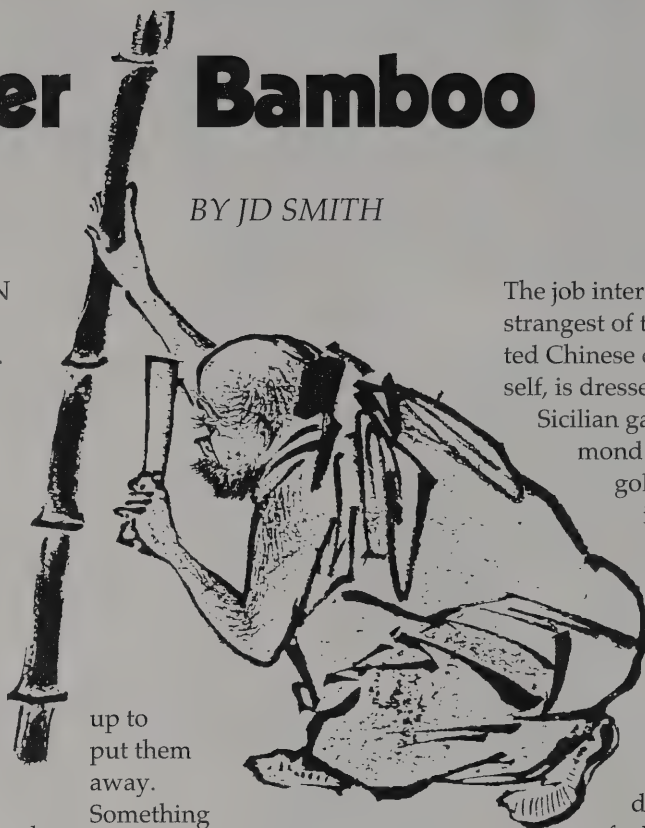
(And Other Immersions
in Water, Myth, and Being Human)
Janet Lembke. 1994; 177 pp.
ISBN 1-55821-274-4
\$21.95 (\$24.45 postpaid) from
Lyons & Burford Publishers, 31 W. 21st Street,
New York, NY 10010; 212/620-9580

No Water Bamboo

BY JD SMITH

LIKE THE SUN WAS IN late Leo, early Virgo the first time I saw San Francisco Bay. I'd come out of Denver in a drive-away four-door Oldsmobile, with my motorcycle took to pieces and wrapped in tarp in the back seat, and everything else I owned was stuffed in the trunk and all around me in the front seat. The car was supposed to end up in The City, but I get lost out by Livermore somewhere and take the hundred mile shortcut up and over Mount Hamilton. Too much ditch weed. Anyway, I start coming up the east side of the Bay, and I know that this is where my home is going to be because I hit Fremont on a Sunday afternoon and right there by the freeway is, like, a full-tilt drag strip with, like, hundreds of far out cars and, I swear to shit, right overhead are real gullwing gliders, man, cruising out over the Bay and landing by the drag strip.

So, before I turn in the car, I score a little house to rent in Menlo Park, by the cemetery. They'll rent right away to an Oldsmobile. I unload my stuff into the house, take the Olds to The City, put the motorcycle together, deliver the car to some Arab rental company, and putt down to my happy little home. In just a couple of days, I score a job as veterinarian's assistant for a crusty old dude on El Camino in Mountain View. It turns out I don't mind shoveling dog shit, really, but I totally can not handle holding the dogs down while the Doc shoots them



up to put them away. Something about their eyes.

So I pull this trip where I tell the vet that California is just too much for me, that I miss my family and I'm headed back to Colorado, and can I please have my week's pay? This guy is so used to losing help that he just writes the check. No deductions, no goodbyes, no nothing.

There used to be jobs around every corner. On the way back to Menlo Park I see a Help Wanted sign. I park the bike and go over and read the fine print that says, like, "Janitor needed, easy work, low pay," and gives this phone number, which I call and set up an appointment for an interview the next day at Lee Manor.

Lee Manor is this hundred-unit, three-story, singles' cinderblock studio apartment thing, down by the Bayshore in Palo Alto, shaped like a horseshoe, with a pool in the middle and a rec room wedged into the open end. I stash the bike a couple of blocks away. You never know.

The job interview was, like, the strangest of trips. This liver-spotted Chinese dude, Mr. Lee himself, is dressed like some kind of Sicilian gangster with a diamond stick pin and big gold pinky ring, sitting in the rec room.

When I come in, he offers me a little plastic cup of chocolate pudding and we sit there eating pudding at this, like, church table, and he doesn't ask, or say, a fucking thing, just stares

at me, watches me eating pudding. I felt like a deer caught in headlights, man, until finally he says, "Let us walk."

I walked. He was, like, ninety years old, and had those metal taps on the heels and toes of his wingtips, so he shuffled, and it was fingernails on the blackboard stuff. Sounded like somebody was dragging a refrigerator down the hall.

So we are standing out by the pool, and he is waving his arms around his empire and telling me to watch the garbage, and skim the pool, and water the bamboo, (which are these little teenage bushes in clay pots all around the pool) and paint the rooms when somebody moves, and buff the hallways, and get three hundred dollars a month. Then he glides over to a Lincoln Town Car and peels out toward downtown Palo Alto. I'm hired.

I never really figured out who lived in Lee Manor. Nobody cares to meet a custodian. But, like, the

first floor was mostly big brown guys from junior colleges being fattened by Stanford as their football team of the future. Big guys produce big garbage.

And the second floor was a crash pad for stewardesses working out of SFO. They were slobs, man. I mean flight attendants may be the super-tidiest of human beings when they are at work, but you put a couple of them in lounge chairs by the pool and they trash all of East Palo Alto with their damn Pringles cans and wads of Kleenex, then they barefoot it back to the pad, man, and leave the mess for the servants. Litterers, man. Get out of an airplane and think the outside world is so big they don't need to hide their trash. Nice butts, though.

And then there was the Artichoke Woman on the third floor. I never

saw her wearing anything but a pink chenille housecoat with dinglebobs all over it. I think she worked nights at Stanford or something. Anyway, she was goofy, man, like lived on a schedule where every Tuesday night she ate artichokes, then tried to run the leaves through the garbage disposal. You can't do that.

The first time I took apart her disposal and found all that fiber wrapped around the works, man, I seriously thought that this chick had, like, decided against hanging herself and had shoved a rope down the sink. The second time I ask her what she is putting down there, and she shows me, so we make a deal, man, and every Wednesday morning after that I pick up a little plastic sack of artichoke leaves from in front of her door.

First of October I come to work

and there is Mr. Lee standing out by the pool and staring at the pool plants which are nice and gold like everything should be by the first of October, right? I'm from Colorado. How am I supposed to know that, with enough water, you can get concrete to bloom all year in California.

Mr. Lee looks me up and down, looks at the plants, looks back at me, at the plants, then reaches into the breast pocket of his Taiwan suit coat, peels off three hundred-dollar bills, hands them to me, and cans me, saying "You are fired, Sir. Somebody no water bamboo." 🍵

JD Smith goes way, WAY back with Whole Earth; his name is legend if not legion. He is a greatheart, a rednecked Rhodes scholar, a househusband, and a hungry writer presently sojourning in Weston, Oregon, next door to the Blue Mountains. You can reach him through WER, if you want to. —JD (no relation)



Linda Connor

BACKSCATTER



Outraged refutations, ecstatic syntheses, icy corrections, generous compliments, modest proposals and rebellious bellows from readers to editors, writers, and each other.

• Letters may be edited for space, though we undertake the task with reluctance and a heavy heart.

Where Did You Get Your Axe?

"These debtors preclude our scorn. Did we not underwrite them when we were born?"

—"Elegy for the Minor Poets,"
Louis McNeice

J. Baldwin:
Where did you put your history?

As one who works with his hands, I have long maintained that people in our materially rich society need to learn to distinguish between tools and machines which answer basic needs (and with which more complicated tools can be made) and tools which exist as ends in themselves, or worse, as apparel (the sort of tools you are often observed to praise, J.).

The former: axes, saws, hammers, mixers, welders, plows, markers, rules, lathes, line, etc. with the addition of basic "off-the-shelf" materials can be used to manufacture — on site, and specific to local conditions — many of the artifacts of daily life that might otherwise be purchased prefabricated, and less adapted to specific locality. The "consumer" in this instance is active in the formulation of his or her material economy rather than passive in the purchase of pre-manufactured designs formulated by someone else far away.

Were we, as an industrial society, to slightly reorient our material and educational economies, this could become the rule rather than the exception. How much more artistically and economically empowering to the individual it would be (whose labor would begin to mean more than simply a job, again) to play an active role in shaping and designing the things used to satisfy the needs and wants of life.

I thought you understood this. Either you do not or the circumstances behind your little morality tale (87:16) in which you appear before us as hero arises out of some personal animosity you bear toward the speakers you vilify.

You ought not hold up to ridicule even naive material self-sufficiency until you understand how rare the quality is becoming, particularly since all you seem to offer us in its place is the fatuous observation that most of us have to buy the axe we use to cut the notches in the logs we are using to build our cabins with.

I'm enlightened now. I'll go buy my house pre-fab. J. Baldwin told me that doing it is myself is selfish and won't work anyway.

Dwight Hales
Haines, Alaska

I intended no sneer at handworkers (I'm one such), but it is well to keep in mind where "basic needs" tools and "off-the-shelf" materials come from. I do get weary listening to talk of self-sufficiency and independence, neither of which can be claimed without reverting to living arrangements seldom seen among even the most traditional Inuit.

Log-stackers and pre-fabbers alike depend almost completely on nasty old Western Industrial Society, whether they admit it or not. —JB

Smart Highways

Your warning about smart highways is timely. Although the issues you raise about reliability and cost are important, a principal concern should be surveillance. Systems for automatic vehicle identification, justified on the basis of improving traffic flow, can be easily adapted to track individual vehicles, and are used that way already with many taxi, bus, and truck fleets. Systems for electronic road pricing are likely to redistribute costs — and possibly create a new bureaucracy — without necessarily reducing congestion. The key question is why so much effort is being devoted to computerisation for road traffic and so little for travel by foot, bicycle or train.

Brian Martin
Wollongong, NSW, Australia

Homelessness and Horseshit

I've been sitting here checking out these books on homelessness (83:75). Wondering how a homeless person would get a copy of the "13 Steps to Recovery"? I'll put this in my donation to women's shelter box.

I turn the page to find a "hobo" in a \$200 jacket. And a yuppie How to Hobo book. I'm sorry, this just struck me as very bad taste and offensive. If I share this copy in hopes of help I hope it's not to others. And how does that flat broke and spendy travel connect?

I just hope you hired the homeless as models. Do you donate your old mags to someone? How about one of those coats?

Maui Reader
Makawao, Hawaii

Greenhouse 101

"Climate Change and the Insurance Industry" (84:16) is BRILLIANT!

I remember telling people on Wall Street about how they were going to lose their shirts investing in nuclear power plants (late 1970s). After Three Mile Island, about half of them listened. After WPPS defaulted, everybody listened (WPPS was the largest municipal bond default in US history, caused by schedule and budget problems with Washington state's nukes).

Putting the insurance industry on the side of environmental preservation would be a major step towards a sustainable economy.

Dave Chapman
Lee, New Hampshire

Japan at Random

The Mayumi Oda piece (84:70) is great, and SOOOOO important! Talk about an oppressed and downtrodden grass-roots activist movement . . . In Japan, they tax nonprofits for the first several years of operation, and after the way Greenpeace was received (admittedly that was partly their own fault) it's a wonder they don't outlaw them altogether.

I met Jay Gluck, the author of *Japan Inside Out*; still kicking although he suffers from Parkinson's disease. That is THE Japan travel book, it has things you never knew you wanted to know in it. *Learning to Bow* is also good; written by one of my predecessors in the Japan Exchange Teachers' Program.



But you know, I really wish you'd left out Dave Barry. It's full of cheap shots and not really suitable reading, I don't think, unless you've been to Japan and have your grain of salt handy . . . Of course, this might be my personal agenda speaking. Dave Chadwick has some integrity; Barry wrote his book as a publicity stunt for his publisher, and makes no bones about it — SLEAZY!

Karen Hawkins
Brattleboro, Vermont

The Earth Continues Whole, At Least

The editor survivor rate is getting pretty slim: last issue, the wonderful Howard Rheingold resigned in favour of the "bigger dream" of John Sumser, who resigned this issue . . . good luck Ruth Kissane, whoever you are.

The *Last Whole Earth Catalog* was my beginning. Growing up in a northern Ontario farm community wasn't a way or a place to be "tuned in" to the scene in California (or anywhere else for that matter). The *Catalog* was like a burst of lights in northern Ontario winter night, sparkling and shining off snowy delights, newly revealed all around me. The *Whole*

Earth Epilog was so good I convinced a half dozen otherwise normal people to purchase their own copies. I subscribed to *CoEvolution Quarterly* and so did my friends. I am missing a number of back issues (sadly mostly numbered among "Rare" and "Extinct") due to unrestrained loan and share enthusiasm.

From time to time, I am not amazed when I learn that an interesting new acquaintance is also a *Whole Earth* subscriber. This is a great notion; all the greater for keeping on keeping on to these many seasons.

So, what is happening with this magazine? To paraphrase a J D Smith piece from many years past, "don't Californicate [Whole Earth]". By the way, what's J D up to these days? somebody please ask him to tell us some more stories.

By the way, what's with J. Baldwin? Is old age sharpening the curmudgeon side of his ax? Two issues, two rants: SUV's and "smart" highways. Ho hum.

Smart highways already exist. They're called railroads. Unfortunately, automobiles don't adapt well to railroad timetables and manners; smaller, specialized hybrids still have potential.

For most of us country folk, a four wheel drive pickup truck is basic transportation. The station wagon versions of our trucks simply allow us to take our families with us when we travel.

By the way, J., I'm glad you're still part of the *Whole Earth Review*. Curmudgeon or no, I still appreciate your presence.

Peace, Love, and Perseverance,
Richard Cuyler
Queensville, Ontario

Updates and Corrections: WER #84

- John Singer, who reviewed Monty Levenson's Tai Hei Shakuhachi Flutes (p. 47), is a master teacher, performer, and recording artist of the Japanese shakuhachi flute. He can be reached at 510/528-2027.

- The correct address and phone/fax number for *The Caretaker Gazette* (p. 61) are: HC 76 Box 4022, Garden Valley, ID 83622; 208/462-3993. ☺

Millennium Whole Earth Catalog Updates and Corrections

Whole Earth Review began life as a tool for keeping *The Whole Earth Catalog* current. Herewith, changes to date for *The Millennium Whole Earth Catalog*.

The author of *The Ascent of Man* (p. 11) was omitted. It is William Calvin.

The *Breeding Bird Census* and *Winter Bird Population Studies* (p. 50) are coordinated by the Association of Field Ornithologists and the Cornell Lab of Ornithology. Inquiries about either program can be directed to the Cornell Lab of Ornithology, 159 Sapsucker Woods Rd., Ithaca, NY 14850. Phone: 607/254-BIRD.

The *International Council for Bird Preservation* (p. 50) has changed names. They're now called *BirdLife International*.

The correct address for *Voters for Choice* (p. 67) is 2604 Connecticut Avenue NW, Washington, DC 20008.

American Friends Service Committee (p. 69) may be found at 1501 Cherry Street, Philadelphia, PA 19102.

The address for *Ambio* (p. 111) is 1041 New Hampshire Road, PO Box 1897, Lawrence, KS 66044. The US subscription rate is \$61/year.

INFORM, Inc. (*Preventing Industrial Toxic Hazards*, p. 112, *Business Recycling Manual*, p. 114) has moved to 120 Wall Street, 16th Floor, New York NY 10005, 212/361-2400.

Urban Ecology (p. 126) has moved. Its new address is 405 14th Street, Suite 701, Oakland, CA 94612, 510/251-6330.

New address for the *Grand Traverse Bay Watershed Initiative* (p. 143) is c/o Jeanna Paluzzi, Coordinator, 3193 Logan Valley Road, Traverse City, MI 49684.

Plastered Straw Bale Construction (p. 149) is out of print. *Althena* and *Bill Steen* have a new book, *The Straw Bale House*, from *Chelsea Green Publishing Co.* under the *Real Goods Independent Living Books* imprint. 1994; 297 pp. ISBN 0-930031-71-7. \$32 postpaid from the Steens at *The Canelo Project*, HC1, Box 324, Elgin, AZ 85611.

Taunton Press (*Small Houses*, p. 148, *Fine Homebuilding*, p. 152, *Fine Gardening*, p. 164) has a new 800 number: 800/888-8286, Operator 77.

The correct price for *Growing Gourmet & Medicinal Mushrooms* (p. 169) is \$39.95 (\$44.95 postpaid).

Fungi Perfecti (p. 169) now has an 800 number: 800/780-9126.

The correct title for the item listed as "Dartmouth-Sony Series of Decision-Support Videodisks" (p. 171) is "Shared Decision-making Programs." The address is now PO Box 54570, Hanover, NH 03755.

The correct address for *Masquerade Books* (*Sensuous Magic*, p. 194) is 801 Second Avenue, New York, NY 10017; the phone number is 212-986-5100.

Prima Publishing (*How to Persuade Your Lover to Use a Condom*, p. 195, *Raising Ethical Children*, p. 203, *Positive Discipline for Teenagers*, p. 216, *Free Electronic Networks*, p. 261) has a new contact number: 916/632-4000.

The address for the *Human Genome Project* (p. 234) is now *National Center for Human Genome Research*, 9000 Rockville Pike, Building 31, Room B1C35, Bethesda, MD 20892; 301/402-9011.

The US subscription price for *AdBusters Quarterly* (p. 253) is \$18. Airmail subs outside the US and Canada are \$40.

Soundprint (p. 258) can now be reached via e-mail (soundprint@american.edu) or URL (<http://soundprint.brandywine.american.edu>). Cassettes of their programs are now \$12.50. They have a free catalog.

Telling the Story (p. 258) is no longer in print, nor are cassettes of it available. It has been replaced by *Sound Reporting: The National Public Radio Guide to Radio Journalism and Production*, Marcus Rosenbaum and John Dinges, eds. \$38.95 from *Kendall/Hunt Publishing Company*; 800/228-0810 (no cassettes).

"*National Native News*" (p. 258) is no longer distributed by *National Public Radio*. New NPR programs include "Latino USA" and "Living on Earth."

Wayside Music (p. 276) should be contacted by fax: 301/589-1819.

The name of the first of the *Other Great Resources* on p. 278 was omitted.

It is *Semiology of Graphics*, by Jacques Bertin.

Macrocosm USA (p. 285) is available from the listed retailer, but the book's nonprofit publishers hope that customers will contact them directly, at 805/927-8030; they do not charge for shipping on phone orders.

New phone number for *In Business* (p. 321) is 608/246-3590. Todd Franklin is now the editor.

The *Japan Experience* (p. 327) has ceased publication.

The *Burley Lite Bicycle Trailer* (p. 345) has been discontinued. The item listed as "Burley Lite Tourist Bicycle Trailer" is now available as the "Burley d'Lite Cargo Bicycle Trailer," for \$305. The price of the *Burley d'Lite Bicycle Trailer* is now \$375.

The subscription price for *Growing Without Schooling* (p. 359) is \$25.

The address for *The Boundary Waters Catalog* (p. 346) is 105 N. Central Avenue, Ely, MN 55731.

SimCity 2000 (p. 363) is now available in *Windows* as well as *Mac* and *DOS* versions.

Fringeware (p. 367) has a new phone number: 512/323-0039.

The correct phone number for *Transform Press* (publishers of *PIHKAL*, p. 370) is 510/934-4930.

Anita Susan Brenner was inadvertently left off the list of *Super-Reviewers* (p. 382).

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Unlike most magazines, *Whole Earth Review* is almost entirely reader-supported. We depend on the extraordinary encouragement of our Supporting Subscribers. Thank you!

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That's as much pressure as I can bring to bear. Please subscribe. ♻️

Gossip

Hey, we're still alive! Supreme success.

1994 was an exciting, harrowing, exuberant, depleting, inspirational and exhausting year for Whole Earth. We're glad to be done with it. The air at Gate Five Road is supercharged with pure stoke as we walk out into the new day. It feels good! We've been through a lot, and somehow we're still pushing on together.

The last gasp of August saw one of those recurrent agonizing moments that we hope are unique to Whole Earth: we had to decide whether we were dead or alive. (The last time our circumstances demanded this decision, the result was *The Millennium Whole Earth Catalog*.) Once again, the staff voted in favor of denial and worked the month of September as volunteers. Our money situation began to stabilize thanks to early *Catalog* orders and diligent hacking at the entanglements of *WER* circulation. And we put out Issue 84.

In December, we wrote readers to ask for help in bridging the months between our present hardscrabble existence and next summer, when (we hope) there'll be royalties from the *Millennium Whole Earth Catalog*. What friends we have! Direct-mail experts consider a four- or five-percent return to be very good; by mid-January, our mailing of 20,000 had yielded nearly 2,000 responses. And they're still pouring in (hint: it's still not too late).

You sent donations. You bought *Millennium Catalogs*, renewed subscriptions, and gave gift subscriptions. You enclosed notes with cheer, encouragement, and ideas. You reminded us how much the Whole Earth community means to you, and why we work so hard to keep it thriving.

Gifts ranged from an anonymous \$2 to a check for £3,500 (thanks, and a heavenly welcome to our new Angelic Subscriber, Felix Dennis of London, England). "S Ain't Claus" of address "Yonder" sent a postal money order for \$400.

Between this mailing and phone-in

orders, we've sold more than 5,000 *MWECs* through our office, at five times the return of bookstore royalties. Mary Mair, and the Human Resources Department at Odwalla Beverages, ordered 225 copies as holiday presents for Odwalla employees.

Thank you! We still need to scramble, but your generosity has bought us several crucial months' time.

Another major breakthrough came in December, when we received a \$20,000 grant from the Flow Fund. This fine organization supports non-profit endeavors and groups that work to heal and protect rivers and other natural flows of water in California. We knew that this issue of *Whole Earth Review* would focus on water, and it seemed a good match.

We've got a new circulation director! Meg Clark, late of *Utne Reader*, has a strong background in circulation management. (She is also the billiards champ of the Sunset District.) There have been changes on Point Foundation's board of directors, too. I joined

the board in November; Ty Cashman was elected in January. Welcome, Ty! At the same time, we're sorry to see Tano Maida step down, and grateful for his service through a difficult year.

As you may have noticed, we've indulged in a brief flirtation with display advertising. We all have to try new things every once in a while, but the flirtation is ending with this issue. Many readers were incensed by the decision to take advertising. And to do it right, we'd have to establish an advertising department. We're not ready, and may never be.

One Monday afternoon in October, J. Baldwin returned to the office from the Ecological Design Conference, held at Esalen on the Big Sur coast. I had never seen J. so inspired. With fire in his eye, he described the Big Sur Declaration — a covenant drafted by the eminent practitioners of ecological design. (Not coincidentally, many of them have aired their ideas in Whole Earth publications over the past couple of decades.) The conference concluded

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with the formation of a multidisciplinary Ecological Design Institute. You'll hear more about this; see p. 44 for details on the Institute's conception.

Further J. Baldwin news: he'll be the shepherd of a new WER domain on eco-design. He's writing a book on modern applications of Buckminster Fuller's ideas (Fuller's work was fifty years ahead of its time). The book will be out early in '96 from John Wiley and Sons. JB is one of the main players in Chris Zelov's inspiring and strongly recommended video documentary *Ecological Design* (reviewed in WER 84, p. 90) — as is Jaime Lerner, mayor of Curitiba, Brazil (see pp. 58-59 of this issue).

Robert Dawson's compelling photographs (inside front cover) are part of the Water in the West Project. It's the most ambitious landscape-related photo project since the New Deal documentary works of the 1930s. Dawson and writer Ellen Manchester first envisioned the project on their

honeymoon, during which they toured toxic sites in the western United States. In 1989 the couple assembled a core group of eight photographers who shared their belief about water: that the way it's been used and abused is emblematic of complex cultural attitudes that have brought us to the brink of ecological disaster. The group has produced two books: *A River Too Far: The Past and Future of the Arid West* and *Arid Waters: Photographs from the Water in the West Project* (1991 and 1992, respectively; both published by University of Nevada Press). Dawson and Manchester can be reached at 415/337-5422, or at 246 Ney Street, San Francisco, CA 94112.

Everything seems to be coming along rather well. Whole Earth buckled down to the basics and with your help, made it through the chasm. We're energized and moving! Thanks again for your support and goodwill.

—Ruth Kissane



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Our readers' concerns range from the environmental and technological to the political and personal. If you are interested in renting our mailing list, please contact Valerie Hutchinson at Pacific Lists: 415/381-0553.

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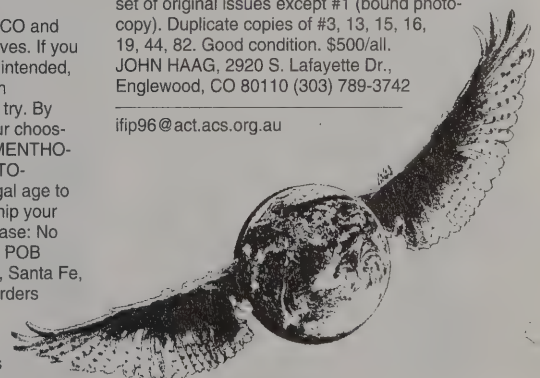
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Just like fine wines and gunpowder, *Whole Earth Review* gets . . . more so . . . with the passage of time. (The staff tends to let their WERs age gently in a heap on the bathroom floor, reading off the bottom or as whim dictates.) The following vintages are still to be found down the Point Foundation cellar, but they won't be around forever!

84. Winter 1994 — Peter Warshall maintains that the insurance industry manifests an ancient, essential human network; Greenpeace drafts insurers to fight global warming. Is the universe a living member of a still-evolving species? Interviews with Pete Seeger and with Helen Nearing; David Chadwick's lightning tour of Japan; Craig Childs's climbing, crawling, muttering tour of Canyonlands. **\$10.**

83. Summer 1994 — Brian Eno on a new theory of music; Stewart Brand's *How Buildings Learn*; family epistemology clinics; tabloids as the modern perpetrators of myth. Also: "Making the Price of Technology Visible," by Howard Rheingold. **\$10.**

82. Spring 1994 — Kevin Kelly's recipe for a lively universe; Robert Rossney expiates the Luddites; an Aussie crank's sustainable New Guinea sawmill; rescuing throwaway food; perilous meditation, sinister dharma, holy curiosity, and pothole obsessions. 1993 Index. **\$10.**

81. Winter 1993 — Child molestation: predation and community response, psychiatric coercion and false memory. White expropriation of Indian religions. Sustainability versus EC agribusiness-as-usual in France. A technological Event comparable to the emergence of human life. Living gay in China. **\$10.**

80. Fall 1993 — Trees are the shape of the universe, and the path of life is arboreal. Irascible, knowledgeable views on health care reform; a privacy toolkit. An aikido master discusses horsemanship, love, and common endeavor. Family life with an autistic child. Stephanie Mills on a piece of Michigan northwoods that was never cut for timber. **\$10.**

79. Summer 1993 — Twenty-fifth anniversary issue: Stewart Brand, guest editor. "Unthinkable" futures, by Brian Eno and Kevin Kelly; Bruce Sterling assassinates the traditional story form; Jaron Lanier on performing music in virtual reality; Kevin Kelly on digital encryption technology; new work by R. Crumb. **\$10.**

78. Spring 1993 — Real-Life Women: childbirth tale-tellers, thrift-shop brawlers, leather dykes, nuns, hymnists. Fiction involving birth, bulls, and angels. Romance novels defended; Mark Twain kneecaps Fenimore Cooper; fever dreams in the Himalayas. 1992 index. **\$10.**

76. Fall 1992 — Post-Darwinian evolutionary theory; artificial life, benign and malevolent; redirecting the military and intelligence structures; identifying dysfunction in organizations; the Seva Foundation and the way to do good; computational chemistry and multipurpose molecules; native American petroglyphs in L.A. County. **\$10.**

75. Summer 1992 — Empathy, consensus, and consciousness; a crosscultural wedding in Cameroon; spirituality and feminism in Islam and Judaism; Huichol Indian peyoteros and Mayan healing; a Big Sex Section; Invisible Literature (a treat for the back-alley semiotician). **\$10.**

74. Spring 1992 — Women's wisdom from Z Budapest and Paula Gunn Allen; pagan zines; reflections of an outlaw volunteer; fighting for the forests: negotiating tactics, tools and resources for forest activists; robot Olympics; Brian Eno on world music; the coevolution of governance; reviews of maps and atlases. **\$10.**

73. Winter 1991 — Questioning technology: Jerry Mander, Langdon Winner, Howard Levine, Peter Calthorpe, J. Baldwin, Ivan Illich, Amory and Hunter Lovins, William Calvin, and others. **\$10.**

71. Summer 1991 — Global and local electronic networking by citizen activists; interviews with Wendy Doniger and James Hillman; storytelling, from multimedia to native American traditions; "Snake Talk," by Anne Herbert; Lara Owen on menstruation; Ecuadorian shaman Mercedes Mamallacta. **\$10.**

70. Spring 1991 — A nationwide information and communication network; access to political tools and to poetry; the Gesundheit Institute; do-it-yourself eclipse prediction, by William Calvin; Cyberthon 1.0. Plus Wavy Gravy, Will Baker, Robert Bly, Gore Vidal. **\$10.**

67. Summer 1990 — Biosphere II; artificial ecology and flocking robots; the solar-powered cottage; a book Stewart Brand won't write; rats as houseguests. **\$10.**

66. Spring 1990 — Helping Nature Heal: the nitty-gritty of successfully restoring natural environment, from savannas to old mine pits to forest creeks. Also: a crime lab for animals; nonviolent witness/escorts in Central America. **\$10.**

65. Winter 1989 — The Global Teenager, a first-hand report from around the world; rock'n'roll revolution in the Baltic states; how to teach English in Japan; spontaneous healing and miracle cures; a free worldwide computer network. **\$10.**

62. Spring 1989 — John Todd on applied ecology; a revival of the Goddess; a flourishing cooperative movement in Spain; environmental idealism in Costa Rica; a section on feminist journals; Malcolm Wells, Will Baker, Pliny Fisk III. **\$10.**

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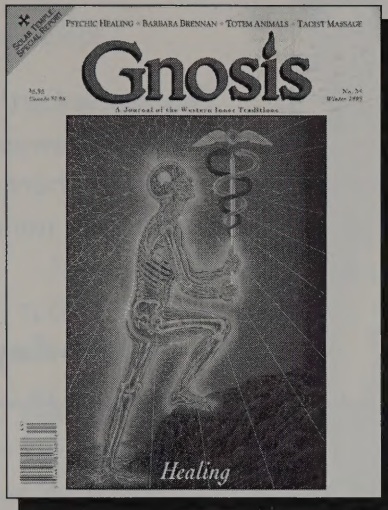
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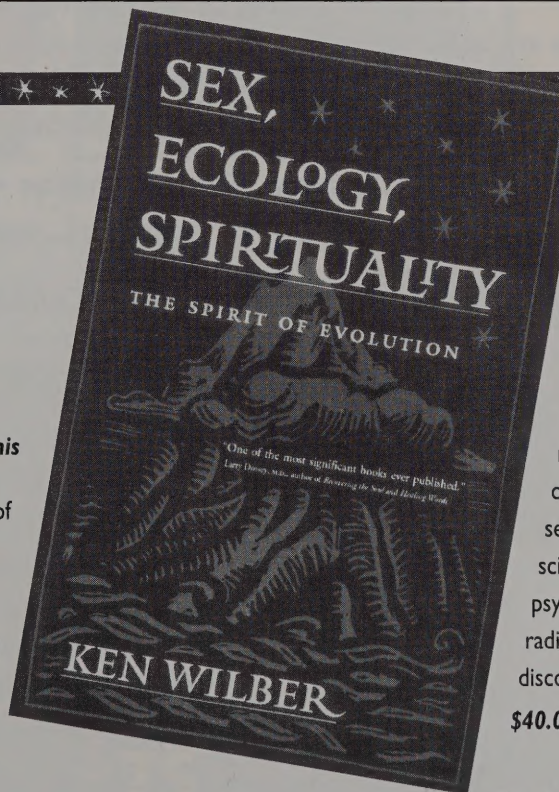
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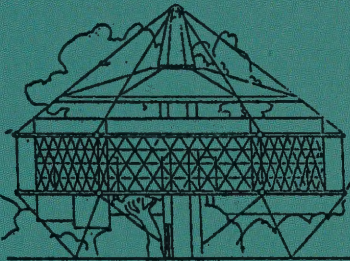
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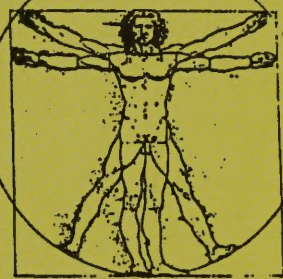
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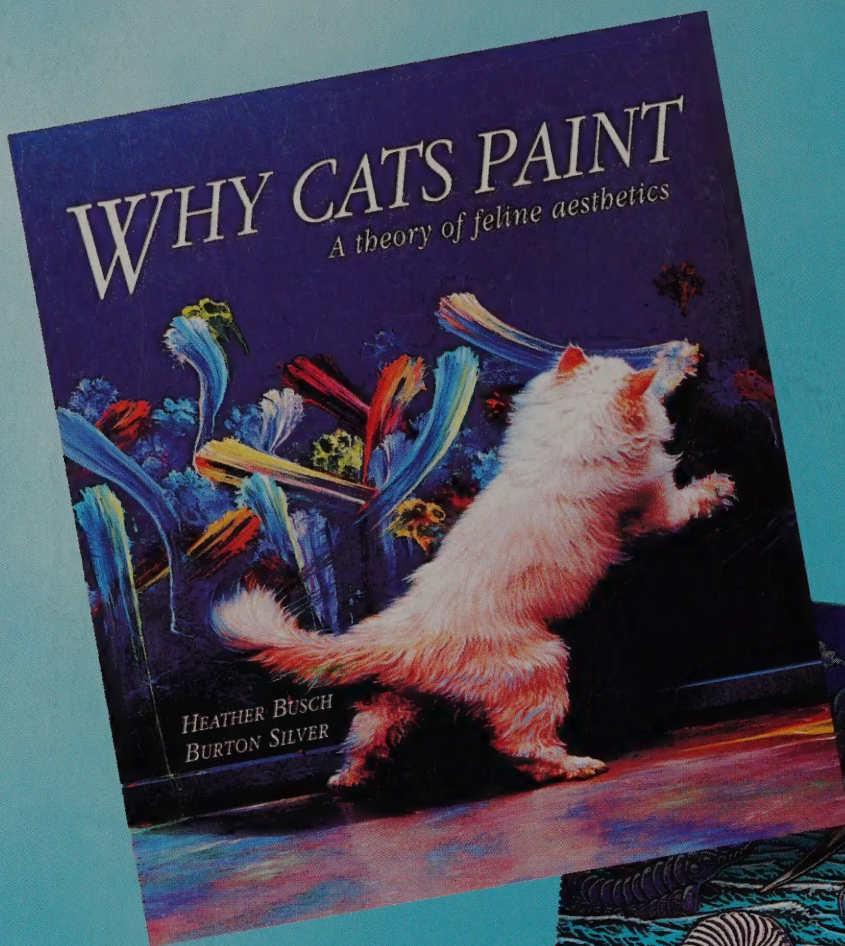
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